

PULP & PAPER *"The Cellulose Age"* INDUSTRY

The Management Journal Cover-
ing North America's Wood Pulp,
Paper and Cellulose Industries.

EDITORIALS

April
1946



Vol. 20
No. 4

Member Audit Bureau of Circulations

SEATTLE (4)

Miller Freeman.....President
Lawrence K. Smith.....Manager
Albert Wilson.....Editor
Miller Freeman, Jr.....Circulation Manager
Lucile Ayers.....Assistant Editor
W. E. Crosby.....Forestry Editor

Publishing Office

71 Columbia St.....Tel. MA. 1626

NEW YORK (17)

Nard Jones.....Associate Editor
370 Lexington Ave. (120 East 41st St.)
Tel. Murray-Hill 3-9295

PORTLAND (4), ORE.

Chester A. Fee.....Associate Editor
534 S. W. 3rd Ave.
Tel. Beacon 6348

NEW ORLEANS (12)

Wm. J. Krebs.....Southern Editor
(400 Baronne Bldg.)
305 Baronne St.....Tel. Magnolia 4808

VANCOUVER, B. C.

Charles L. Shaw.....Canadian Editor
675 W. Hastings St.....Tel. Marine 1520

CHICAGO (37)

Daniel V. Bergman.....Regional Editor
5735 So. Woodlawn Ave. Tel. Plaza 9307

SAN FRANCISCO (5)

Stuart Leete.....Regional Editor
121 Second Street.....Tel. GA. 5887

LOS ANGELES (13)

Arthur Ponsford.....Regional Editor
124 W. Fourth St.....Tel. Mutual 8191

DENVER (2), COLO.

Karel Wegkamp.....Regional Editor
711 Colorado Bldg.....Tel. Keystone 6051

Contents Copyrighted 1946 by
Miller Freeman Publications, Inc.

SUBSCRIPTION RATES

United States.....	\$2.00
Canada.....	\$2.00
Other Countries.....	\$3.00
Single Copies.....	\$.35
Review Number.....	\$1.00

Skies Clear Over This Department

THE new Secretary of Interior, Mr. Krug, comes from the second biggest paper producing state, Wisconsin (first is New York), and his home town is Madison, where much has been done to promote this industry.

If that doesn't make him sympathetic with this industry, then maybe a little more work can be done on him when he attends the Conference of Western Governors in Olympia, Washington, in May. For Washington—by a substantial margin—is the biggest wood pulp producing state in the nation.

Anyway, most industry leaders are happier with Mr. Krug in the saddle than they were with Mr. Ickes, who seemed to enjoy his fixation about private forestry industry operators.

Fat Papers vs. Lean Ones

DOLLAR allocation in Britain for purchase of more North American newsprint will be increased only if the U. S. loan to Britain is approved, Sir Stafford Cripps, board of trade minister in the British cabinet, has indicated.

On the basis of his suggestion, this is the prediction of a London newspaper survey:

If there is no American loan British newspapers will continue indefinitely to use only four pages.

If it does go through, then the present four pages will quickly become six—the autumn is a provisional date. Then there will be eight pages in 1947.

And in 1952—the date fixed by even the most optimistic champions of Fleet Street's bigger newspaper drive—there will be a 16-page paper in Britain which those with the full knowhow of the British industry maintain is the absolute maximum size that can be economically produced in Britain for many years to come.

Meanwhile, United States newspapers are getting fatter, although their stocks are precariously low. The howling of some newspapers over the trend of American mills to abandon newsprint and go into higher grades of paper will not be tempered by any consideration of what is happening in Britain. It is argued, and perhaps rightly so, that any great sacrifice by newspapers on this continent would threaten our high educational and cultural standards and should not be considered just because Britons have less to read.

Frozen Food Flop

THE Frozen Food Institute at New York's Park Avenue Armory the last week in March may have been of benefit to the exhibitors, but it could have done little to further the interests of the industry with the general public.

Consensus of most observers was that it was a mistake to throw the exposition open to the general public, for a much better "sales talk" for frozen food is available in many a large and small store throughout the nation.

Exhibitors were few, and their displays were interspersed with pitch men, carnival attractions, and games of chance. Only a small part of the Armory was filled with exhibits.

Frozen foods loom big in the future of the pulp and paper industry. But industry representatives could learn a lot more about the possibilities by seeing the superior display at Macy's in New York.

ERIC JOHNSTON, President, Chamber of Commerce of the U. S.—"Our American system of free economy passed the test of war with flying colors. The question is now whether this system will pass the test of reconversion and peace."



TAPPI
ANNUAL LUNCHEON
HOTEL COMMODORE FEB.

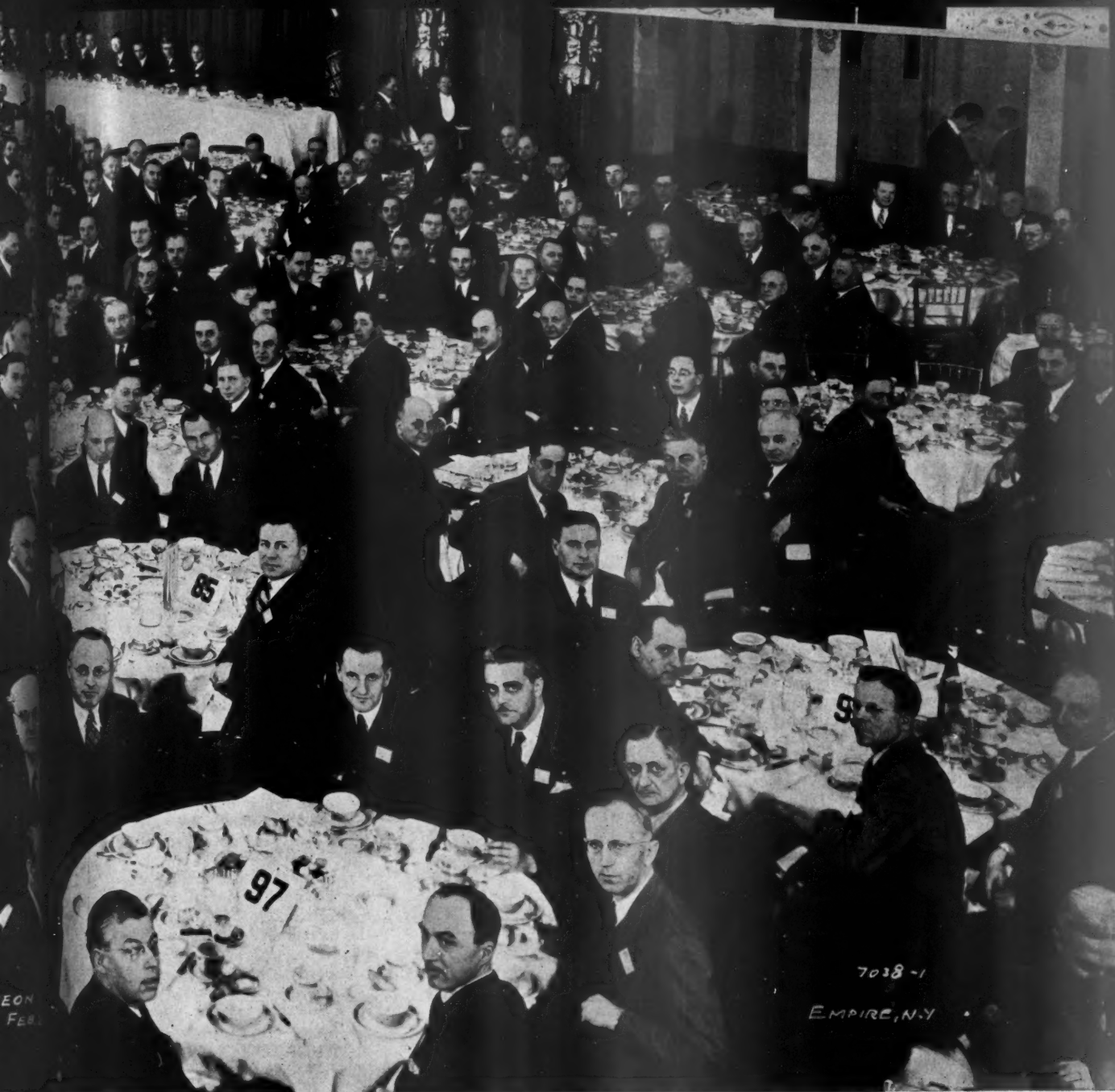
IF YOU CAN'T FIND "KILROY" IN THE ABOVE PICTURE,

There were 1400 at the big TAPPI luncheon in New York on Feb. 28. That compares with only 800 at the last previous affair of this kind in 1944.

At the head table (left to right) are shown: ED F. BURNS, International Paper Co.; A. E. CADMAN, Manager Canadian Pulp & Paper Assn.; RAYMOND BARTON, President, American Pulp & Paper Mill Supts. Assn.; W. E. BURCHARD, Fraser Paper Companies, Ltd.; W.

IRVING OSBORNE, JR., President of National Paperboard Assn. and of Cornell Wood Products; ROBERT FOWLER, President of Canadian Pulp & Paper Assn.; G. W. E. NICHOLSON, President of TAPPI and Vice Pres., Union Bag & Paper Corp.; REAR ADMIRAL H. D. NUBER, who presented Achievement Certificate to TAPPI; VANCE P. EDWARDES, Chairman and retiring TAPPI President and Sulfite Supt., I. P. Co., Palmer, N. Y.; R. G. McDONALD, Sec-

retary of TAPPI; WILLIAM G. McNAUGHTON of News Print Service Bureau and winner of TAPPI Gold Medal; JAMES D'A. CLARK, who presented the medal; W. E. BRAUN, Pejebscot Paper Co.; DOUGLAS JONES, Secretary, Technical Section, Canadian Pulp & Paper Assn.; E. W. TINKER, Secretary-Treasurer, American Paper & Pulp Assn.; W. F. GILLESPIE, TAPPI executive and Tech. Director, Gaylord Container Corp., and J. W. HEMPHILL, Johns-Manville Co.



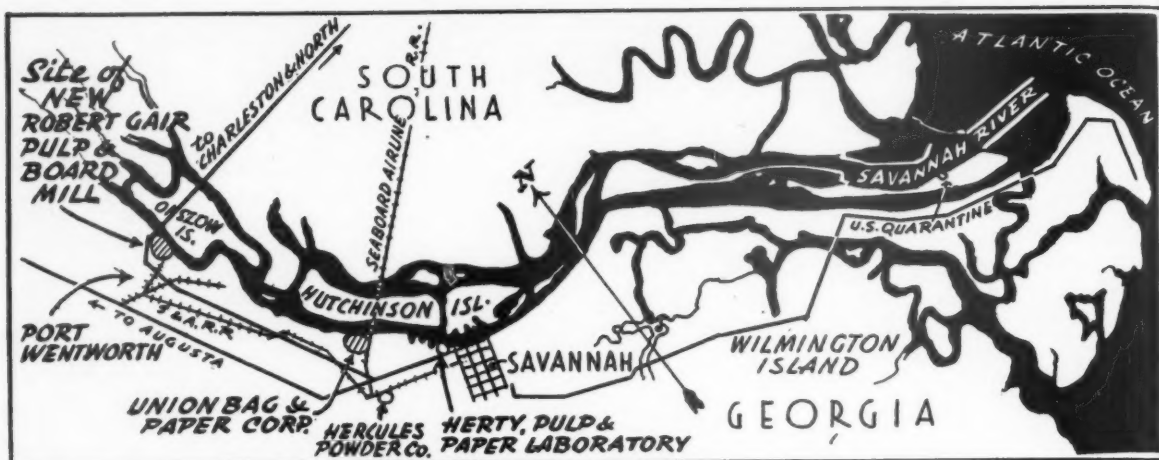
YOU MIGHT SEE IT IF YOU CAN FIND YOURSELF

Down near front center can be spotted Sigge Ekman and Karl Fries of Rhinelander, D. Manson Sutherland and Col. Harry Johnson of Sutherland Refiner Corp. Near extreme upper right is Ralph Hayward, president of KVP and former TAPPI president, and in extreme lower left is Edward T. Wood, assistant manager of H. & W. mill in Mobile. We might name off a lot more, but we'll let you have the fun.

A prominent member of the industry recently wrote this magazine, saying the February convention in New York was so big that he came away with a sense of "frustration." There was so much to hear and see. You couldn't be every place at the right time. That's why in our story of the convention, published in our March issue, we tried to fasten on significant essentials and interpret the APPA and TAPPI meetings. Our 13-page

report in March, in this respect, was unique. We have more copies of the March issue, if you wish to send this report to friends or get a copy for yourself.

P. S.—"Kilroy" is the Marine whose name became a byword in the Pacific as well as all over U. S., in waiting rooms, bars, etc., where signs "Kilroy was here," were commonplace.



ROBERT GAIR, INC., OFFICIALLY ANNOUNCES PLANS FOR BIG MILL

Thrilling story of community enterprise shows how Savannah, Ga., won out in competition for new industry, wealth and employment in South.

George E. Dyke, president of Robert Gair Co., Inc., and chairman of the board, has officially announced that Southern Paperboard Corp., jointly owned by Robert Gair and Fort Wayne Corrugated Paper Co., will build a 450-ton-per-day kraft pulp and paperboard mill at Port Wentworth, near Savannah, Ga.

The news on April 1 started a wild celebration in the bustling little town of Port Wentworth, with its population of 3,500. Air raid sirens whined, hurricane bell tolled, and meanwhile carpenters already were hammering away at new homes for construction engineers.

The mill and a Fourdrinier container board machine for this purpose will not be "completed for two years and will not attain full production until one year later," said Mr. Dyke's previous announcement to stockholders.

It had been previously announced by interested public authorities that the new Gair plant would cost \$9,000,000 and \$3,000,000 will be invested in woodlands and timber.

Later it is planned to add a bleach plant and a second machine for bleached kraft board, as well as one or more box shops, all of which would considerably augment the 450-tons-per-day output.

Savannah Favored

The site choice was between two possibilities—a 181-acre site at Port Wentworth, six miles above Savannah on the Savannah River, and the 1490-acre Gair-Santee site near



GEORGE E. DYKE, President and Chairman, Robert Gair Co., Inc., 155 East 44th, New York City, who announced plans for new 450-tons-per-day pulp and paperboard mill in South, operating on Savannah River. This company operates 12 paperboard and boxboard plants in eastern U. S. and Canada with daily capacity totaling over 1,400 tons. It also has 19 fabricating plants.

Orangeburg, S. C., which was purchased in 1945.

The battle was over when the Savannah aldermen put up the money for a water system. Gair, thereupon, immediately exercised its option on the Port Wentworth site with 3,000 ft. frontage on the Savannah River.

In the December, 1945, issue, PULP & PAPER INDUSTRY exclusively re-

ported that Robert Gair, Inc., had turned its interest to the Savannah River site and at that time, Robert Nelson, Savannah port executive, said the change was made because the Orangeburg plans failed.

He said a \$150,000 dock to load 3,000-lb. paper rolls on ships would be built at the new mill site, which is shown in a map accompanying this article. It is a short distance farther up the river from the big Union Bag & Paper Corp. plant.

Last month, also in this magazine, it was announced that all obstacles to construction of the Gair mill at the Savannah location had been removed.

According to Mr. Dykes, "Savannah has better rail and water facilities and more labor and housing available than at Santee."

Also, he pointed out that Savannah had overcome lack of industrial water supply by deciding "to carry out plans for a supply which would be ample for the requirements of a mill of the size projected."

For these reasons, Robert Gair, Inc., secured an option at Savannah. Behind this story of the change in the plans of this prominent paper industry firm is one of contrast between the way two communities responded to the opportunity of bringing new wealth and employment to their locality.

The new mill will employ 650 at the start; 1,000 when the first unit is completed and 2,000 when the bleach plant and second machine are going.

Savannah "Hospitality"

PULP & PAPER INDUSTRY'S Southern editor, on a trip in the two areas, was able to put the parts of an interesting picture together, which revealed the enterprise and vigorous action taken by the City of Savannah to put their community back in the running.

It also revealed vacillating, time-wasting tactics and sheer hindrances to a new industry which were evident in "preliminary rounds" in the negotiations for a possible mill on the shore of that part of the Santee-Cooper Hydroelectric Project near Orangeburg, S. C., known as Lake Marion.

Here again rose that familiar situation of so-called "sportsmen" asking a pulp and paper company to furnish bonds for "damage" to wildlife and subsequently spokesmen of the Isaac Walton League said they would "sponsor legislation" requiring a pulp mill to "purify" its discharge so no fish would die in Lake Marion. The little matter of determining what is damage and when water is pure was to be just a detail.

Meanwhile, the Santee-Cooper Public Authority blew hot and cold on the project, as political bodies often do. Savannah city authorities virtually lifted themselves "by their own shoetops." On April 1, Mr. Dykes notified Mayor Nugent that his company's \$12,000,000 equity and mortgage financing had been completed. And T. M. Johnson, water supply commission chairman, handed the mayor a check for \$2,945,625, proceeds from sale of revenue certificates for the water system.

Timber Holdings

Gair now owns and has mortgage interests in about 60,000 acres of timber and has options on other woodlands in Georgia, North Carolina, South Carolina, and Florida. In addition, Mr. Dyke reports, it has an agreement with a pulpwood contractor for 132,000 cords annually until 1957. From these and other sources, in addition to lands to be acquired, there will be approximately 225,000 cords of pulpwood per year available, and this is the amount estimated to be necessary to produce 135,000 tons of board on the initial machine.

The name change from Gair to Southern Paperboard Corporation took place on Feb. 13, parallel with an authorization of capital stock to the extent of 55,000 shares of Class A Common, and 36,666 shares of Class B Common, all of \$100 par value. Both classes have the same rights and powers except as to vot-

ing wherein in certain instances provision is made for voting by classes.

The company has exchanged the 10,000 shares of no par stock of Gair Santee previously acquired for 10,000 shares of the Class A Common, and later purchased 45,000 additional shares of Class A Common at par. The company then purchased the \$4,000,000, 20-year promissory note of Southern Paperboard Corp. secured by mortgage. Fort Wayne Corrugated Paper Co., an Indiana corporation, has purchased at par 25,000 shares of the Class B stock of Southern Paperboard Corp. and also has an option for five years to purchase 11,666 additional shares of Class B stock at not less than par. Thus on the completion of its present financing, Southern Paperboard now has outstanding a \$4,000,000



T. W. EARLE, who has been associated with the Gair organization for past year, acquiring woodlands, is President of Gair Woodlands Corp.

He is also President of Southern Pulpwood Conservation Association.

25-year promissory note, \$5,500,000 par value of Class A stock and \$2,500,000 par value of Class B stock.

The company and Fort Wayne Corrugated Paper Co. have entered into agreements providing for the sale by Southern Paperboard Corp. of the entire output of the initial machine for 20 years of which the company will purchase 60% and Fort Wayne 40%. The fabricating capacity of the two companies "substantially" exceed the estimated capacity of the projected machine.

Water Project

Savannah authorities have provided for issuance of \$1,000,000 in bonds to provide for the water project. This bond issue and the previously mentioned revenue certificates for about \$3,000,000 will finance the water system.

The \$4,000,000 water system will have a capacity of 35,000,000 gallons daily and on Feb. 3 the Gair representatives signed a contract with Mayor Peter R. Nugent, of Savannah, for an initial 10 million gallons. This would be supplied at "cost."

After the completion of the orig-

inal mill, when Gair adds the second board machine and bleaching unit, it would require 15 million gallons of water daily.

The city's problem was to obtain binding commitments from underwriters for the revenue anticipation certificates at a rate of interest not to exceed 2¼% and payable beginning with the sixth year. Average payments of principal and interest after the sixth year will be \$233,500. Gair will pay \$100,000 into a special reserve fund which will be available for use to pay principal and interest on the certificates should the water plant revenues at any time be insufficient. After the 21st year, Gair will get credit for this.

The city has agreed that it will advertise for bids for construction of the water plant within 40 days after the receipt of notice from Gair that Gair will begin construction of the mill. Gair has agreed to begin construction of the kraft and paper mill prior to Dec. 31, 1946.

When the question came up of a mill water supply, Charles J. Musante, executive secretary of Savannah Port Authority and Industrial Committee of Savannah, Inc., said this would be assured. Mr. Musante was for many years forester for Diamond Match Co. on the Pacific Coast and in the Southeastern states.

Several years ago, stated Mr. Musante, Savannah interests conducted a investigation which led to formulation of plans to draw fresh water from the Savannah River several miles above the city to provide an unlimited water supply for industry. These plans include a reservoir, settling basin and filtering tank at Cherokee Bluff. Water would be brought to the Savannah industrial area by means of a covered concrete canal.

For the new mill, J. E. Sirrine & Co., 215 South Main St., Greenville, S. C., had been retained as consulting engineers. T. W. Earle, a vice president, opened an office in Orangeburg, the county seat, 24 miles distant from the site.

Some History

The first announcement of the projected paper mill at Santee village came from R. M. Jefferies, chairman, South Carolina Public Service Authority, Columbia, S. C., who published on June 2 the report that Robert Gair, Inc., would invest \$12,000,000 in such a project in Orangeburg County.

Orangeburg is 120 miles from Savannah and 70 miles from Charleston, S. C. In early discussion of the



FLEXIBLE PACKAGING sales will increase from \$100,000,000 annually to \$250,000,000 in ten years, it was predicted at recent Packaging Institute held in New York last month.

A. V. SHANNON (left), **WESTFIELD RIVER PAPER CO.**, Russell, Mass., said because of limited glassine available, attempts are being made to find markets which would use not one, but all, functions of glassine.

DR. FRANK CAMPINS (right), of National Adhesives, said "We are leaving behind the word 'bag' and 'envelope' and taking on the more responsible and demanding term—'container.' You will soon be able to package any product with a shape appropriate to it. Wider container use is due to plastics and new converting machinery."

paper mill project, the possibility of inaugurating an inland waterway service to connect the mill with Charleston, via the reservoir and the Cooper River was spoken of.

But all those plans have now, figuratively, gone down the Cooper River, lost forever to that community in the face of a determined Savannah citizenry.

On Oct. 18, the rivers and harbors committee of Congress authorized the U. S. District Engineer to conduct a hearing anent channel improvement for the Savannah River at and near Port Wentworth, which is located in Savannah harbor.

On the following day the Orangeburg newspaper called attention to conditions being injected into the signing of contracts, etc., for the paper mill "to which no business firm could subscribe."

These included a guarantee against damage to wild life within a 40-mile radius of the mill. The issue of wild life and recreation was even taken to the Conservation Department, in Washington, D. C.

Facts About Savannah

The site near Savannah optioned by Gair was used by MacEvoy Shipbuilding Company for the construction of concrete tankers during World War II. Deepening of the channel alongside the new \$150,000 dock and cutting of a sharp river bend was asked, Mr. Nelson said.

Savannah's port authority looks with favor on the possibility of add-

ing 135,000 tons of container board annually to production there and to steamship cargoes to North Atlantic ports.

Savannah now has 143 manufacturing plants. A city population of 150,111 is included in 829,967 persons living within an area of 100 miles radius. Savannah is on the south bank of the Savannah River, fresh water, a distance of 24 miles from deep water beyond the bar in the Atlantic Ocean. The port has a waterfrontage of 36 miles exclusive of terminal slips. The Savannah Harbor is 30 feet deep and 500 feet wide from the 30-foot contour at sea to Old Quarantine Station, Cockspur Island, 10.2 miles; thence 30 feet deep and 400 feet wide to the Seaboard Air Line Railway bridge, 16 miles; thence 26 feet deep and 300 feet wide to the foot of Kings Island, 1.3 miles; and thence 26 feet deep and 200 feet wide to the Savannah Creosoting Co., 2.1 miles, a location just below the site under option.

The mean range of the tide is 7.4 feet at the City of Savannah and 6.8 feet at the harbor entrance. The spring tide ranges are 8.6 feet at the City of Savannah and 8.0 feet at the harbor entrance.

There is only one bridge across the channel, located 2.2 miles above Bull Street, with a bascule lift of 116 feet horizontal clearance. All railroad terminals are located below the bridge.

A channel in the Savannah River from the upper limits of Savannah Harbor to the City of Augusta, Georgia, 75 feet in width by 6 feet in depth at a mean low water, is maintained. The water distance is 199 miles.

From the standpoint of rail service, Savannah is considered by some in the paper industry as having an advantage over other nearby mill locations inasmuch as it is served by the Seaboard Air Line Railway, the Atlantic Coast Line Railroad, the Southern Railway, the Central of Georgia, and the Savannah & Atlanta Railroad. It is understood that special end rack railroad cars used for pulpwood movement are in great demand so that originating carriers will not permit their transfer to another line. In this case, pulpwood with a double rail haul must be moved in box cars, which increases loading and unloading costs.

Forest Products

Forest products have long been a principal source of revenue in the Savannah trade area. These are divided into two general classes:

naval stores products and wood products.

The most important species of trees are pine. These consist of long leaf, slash, loblolly, short leaf, pond, sand and spruce pine. Next in order are, eastern red cedar, sweet gum tupelos, red maple, southern sweet bay, southern magnolia, oak, ash, elm, hickory, holly and persimmon. Due to improved forest practices, it is reasonably certain that forest products will continue to represent a major portion of the annual revenue of the area.

The estimated value of forest products in the trade area in 1942 is estimated as: lumber \$18,387,400.00; pulpwood \$8,481,100.00; others (includes poles, piling veneer logs, cross ties, cooperage, fuelwood, misc'l.) \$14,771,000.00; total \$41,639,500.00.

The disposition in the Savannah community, which is apparently opposed to the idea of "strikes" and "violence," is to settle any dispute arising out of the disaffection of labor by the methods of common counsel and the spirit of fair-play. Labor in Savannah by its composition of homogeneity is not subject to the agitation common in large industrial sections in other parts of the country, and is willing to participate in arbitration leading to a satisfactory solution of any question at issue. This cooperative attitude is proved by the fact that strikes of any nature are extremely rare in Savannah. Employers at Savannah are impressed by the loyalty of their labor.

Lumber Mill Closes; Wood for Paper Industry

Tremont Lumber Co., of Rochelle, La., will discontinue manufacturing lumber but will sell pulpwood thinnings from its 179,000 acres of woodlands. President William T. Murray said the company is not going out of business but would "tree-farm" its holdings and conduct a reforestation program.

The company is well situated for pulpwood sales, its lands being not too distant from paper mills at Hodge, West Monroe and Bastrop, Louisiana. It has been producing 20 million feet of pine and eight million feet of hardwoods annually.

\$2,000,000 Blaze Hits Paper Mill

The already limited prospective newsprint supply from mills of Canada suffered a heavy blow when a \$2,000,000 fire partially destroyed the E.B. Eddy Paper Co. plant in nearby Hull. The blaze also rendered useless one of the two bridges linking Ottawa and Hull. The fire destroyed 35,000 tons of pulpwood, comprising most of the company's 1946 summer supply for the manufacture of newsprint and other paper sold throughout the world.



F. S. LEINBACH, Assistant to General Manager of Riegel Paper Corp., was Moderator of Panel at Atlantic City Packaging Conference and Exposition.

Army Awards for Aid In Packaging Research

Twelve awards for meritorious service in connection with packaging research for the World War II food program have been made to the following by the Army's Quartermaster Subsistence Laboratory in Chicago:

H. T. Barker, Bird & Son, East Walpole, Mass.; L. S. Johnson, Hummel & Downing Co., Milwaukee, Wis.; George R. Sears, Institute of Paper Chemistry, Appleton, Wis.; W. H. Graebner, Marathon Corporation, Menasha, Wis.; Peter J. Massey, H. P. Smith Paper Company, Chicago; Frank Pocha, Paper Shipping Sack Manufacturers Assn., New York; Reynolds Guyer, Waldorf Paper Products Co., St. Paul, Minn.; Otto Miller, Beech-Nut Packing Co., Canajoharie, N. Y.; Karl E. Prindle, Dobeckmun Co., Cleveland; R. G. Macdonald, TAPPI secretary, New York; Charles Southwick, Shellmar Products Co., Mt. Vernon, Ohio, and A. Wendler, E. I. du Pont de Nemours Co. (cellophane div), Wilmington, Del.

and the individual fruit or vegetable cellulose wrapped.

The air lines executive did not dodge the matter of rates. They are, admittedly, still high—but they have been steadily lowering. A rate of 15 cents per ton mile from Washington, Oregon, Idaho and California, means as much as 18½ cents per pound on some perishables, for instance on a fresh salmon. That air cargo rates are high now is not nearly as important as the fact that some companies will be ready to go when rates are not prohibitive. And for countless perishables, the rates by air are practical even now. To dramatize this, many exhibitors had fresh fruit and vegetables air-shipped daily. It is said if the cargo planes were available, the present-day demand, in the perishables field alone, would send out 80 planes daily from east to west, and an almost equal number west to east.

Other Speakers

Certainly it was in part a realization of the air cargo business in the transportation of perishables that led C. F. Manning, vice president of Reynolds Metals Co., to predict a ten-fold production increase of metal foils and paper-foil laminations. Competition for the paper industry was apparent in his announcement that 50-inch width sheets of metal foil could now be manufactured, and that there is a great increase in the demand for heavier gauge aluminum foil.

Standardization of cartons used by an individual company is the answer to steady supply, the conference was told by R. G. Anderson, packaging methods supervisor of Sperry Gyroscope Co. But, he said, standardization should not avoid color and design and it should be kept in mind that the package is the company's silent salesman. He demonstrated a war developed container which bids to compete sharply with paperboard for certain types of instruments and repair parts. It is a heat-sealed metal container with a cellulose wadding pack in which the instrument or part is encased in molded curled-hair.

Description of Exhibits

The great Atlantic City public auditorium was alive with color and movement as the scene of the Packaging Exposition and several leading paper companies and associated industry firms exhibited. Two associations, the Flexible Packaging Institute, and the National Association of Paper Box Manufacturers, were present with displays.

O. E. Lyons, advertising manager for Marathon Corp., was in charge of the "Marathon Packaging" exhibit which emphasized the company's research and featured aluminum foil laminates, coated

(Continued on page 48)

Management Association Holds Packaging Show at Atlantic City

Packaging has become a job for top management, and now ranks with finance, sales, production, and personnel problems.

That fact was apparent throughout the American Management Association's Packaging Conference and Exposition held April 2-5 at Atlantic City—and it is a fact which forecasts exciting things for the pulp and paper industry in general and the packaging industry specifically.

"There is so much happening in the packaging field, especially in the packaging of perishables, that I would not venture to say that 10% of our present packages will be in wide use three years from now." That was how an executive of a paper company at the exposition put it to a PULP & PAPER INDUSTRY editor.

Paul E. Burbank, manager of cargo sales for United Air Lines, told the conference that it has been only in the past six months that the full impact of new cargo planes has been felt by industry generally. Mr. Burbank, who began his business career with Eaton Paper Co., a pioneer in the manufacture and sale of air-mail papers, stated that "air cargo" was much further along today than the aviation industry had dared hope a few months ago. For example, he pointed to the 38,000-pound capacity Boeing cargo ship which can be loaded from trucks by electric winches, and transverse the continent in eight hours. A combination propeller and jet-pushed job now being built by Martin which will be a forerunner of completely jet-propelled cargo ships, in his

opinion. The export business is being embraced in air-line plans, and New York to Paris is already a mere 15-hour run.

There is now only a 2% "lateness" in all air cargo schedules, Mr. Burbank said. Blind landing systems, the further development of radar and loran, will cut that down, he promised.

Mr. Burbank took the position that there is no business in the U. S. which cannot use air cargo in part or in whole. Live lobsters are going from east to west in increasing quantities, in new-type containers developed by Robert Gair Co., and Hinde & Dauch. Rocky Mountain trout in similar containers are flying regularly to New York and other eastern centers. Oregon peaches are reaching the east less than ten hours from the tree. A California florist is shipping orchids and other quality blooms in foil and cellulose wrap—under names like *Star Dust* and *Sky Bloom*—and has formed (Flowers Air Delivered) an association of florists shipping by air.

The air-borne containers which Mr. Burbank demonstrated are fairly complicated. Shellfish containers have an impregnated inner liner, side panels, waterproof bag for crushed ice or trays for drainage. A fish fillet container for pre-chilled fish features an inside cellulose bag. Flower containers are paperboard with fancy paper overlays, inner liners of foil and paper laminates flanged for trays, and with cellulose transparent tops. A fruit container is a cylindrical paperboard drum with metal top and bottom

NATIONAL LEADERS TO BE AT GEARHART; SHIBLEY PRIZE HAS INTERESTING HISTORY

TAPPI National President Gunnar W. E. Nicholson of New York is scheduled to make the Shibley award presentation at the annual spring meeting next month of Pacific Coast superintendents and TAPPI.

This award for the best technical paper of 1945-46 by young operations employees of Pacific Coast mills will, as usual, be the surprise climax of the two-day gathering, which is set for May 17-18 at Gearhart, Ore.

Raymond Barton, of Plainwell, Mich., president of the American Pulp & Paper Mill Superintendents Association, and Ronald G. "Red" McDonald, of New York, secretary-treasurer of TAPPI, also will be featured speakers at the meetings, according to plans.

Incidentally, Mr. Barton, who is superintendent at Michigan Paper Co. of Plainwell, is going to be traveling about a total of 6,000 miles or more in the interests of his organization in the next two months, attending regional meetings as well as the superintendents' national convention at Poland Springs, Maine, June 17-20.

Mr. Nicholson, who is vice president of Union Bag & Paper Corp., in charge of manufacturing, told PULP & PAPER INDUSTRY he heartily endorses the far western organization's efforts to stimulate technical studies and authorship by young men in the mills through the Shibley award. Because of his own long-standing interest in the development of these younger employees, he said he was especially pleased to accept the invitation to present the prize.

Honors Kenneth Shibley

The award was named in honor of Kenneth "Cap" Shibley, who was known throughout North America industrial and technical circles as an authority on water treatment. Mr. Shibley died in Seattle, where he had lived for the last ten years of his life, on May 1, 1937.

His death after only a week's illness was a shock to the hundreds of friends his winning personality had made for him. Some time later when his former associates in the Pacific Coast TAPPI section were planning to start an annual contest in order to encourage participation in the organization by younger mill employees, it was recalled that Mr. Shibley had given much of his time and effort to bringing these employees into TAPPI early in their careers and to ways and means of keeping them interested in the Association. The suggestion to name the award for him was enthusiastically approved.

Mr. Shibley acquired the nickname "Cap" because of his military rank in World War I. He was a graduate in engineering at the University of California. As manager of the Shibley Co., predecessor of Northwest Filter Co., he designed and installed most of the industrial water filtration plants on the Pacific Coast. In the pulp and paper mills these plants contributed materially to cleanliness of product and they provided a higher grade of water than even municipalities required.

The actual monetary value of the Shibley prize—\$50—is not by any means a measure of its intangible value to the young men who have attained some measure of prestige and even national fame by winning it. From the beginning, the contest has been restricted to employees engaged in operations departments of the mills and the average age of contestants is about 26 to 28 years. Occasionally, research staff members have transferred to operations temporarily in order to carry out some study for participation in the contest. Papers entered in the contest are judged on presentation, as well as other standards, and must actually have been given at the TAPPI section dinner meetings. A committee appointed by the section chairman decides the award at a closed session in connection with the annual spring meeting. It is kept secret, usually, until the dinner on the final night, which wives as well as members attend and which precedes the customary dance.

Contestants' Name and Paper Titles

In 1945 there was no Shibley award because of the government's request early that year that meetings be called off. There had been only one paper given and that one is entered, with four others, in this year's contest.

Here are names of the contestants, the titles of their papers and the issues of PULP & PAPER INDUSTRY in which they were published:

William F. Abbott, Puget Sound Pulp & Timber Co., Bellingham, Wash.—"Recovery of Sulfite Waste Liquor from Blowpits"—this issue.

Russell Graff, Longview Fibre Co., Longview, Wash.—"A Study of Cottrell Precipitation Operation"—this issue.

Oliver P. Morgan, Weyerhaeuser Timber Co., Pulp Division, Longview—"Viscosity Control in Production of Bleached Pulps"—Feb., 1946, issue, page 56.

William Pittman, Weyerhaeuser Timber Co., Pulp Division, Longview—"Extraction of Tannin from Waste Western Hemlock Bark"—Dec. 1944 issue, page 35.

Peter M. Wilkie, Crown Zellerbach Corp., Camas, Wash.—"Some Practical Aspects of Douglas Fir Pulping"—March 1946 issue, page 64.

Notice cards for the Gearhart meeting are being sent out to members of TAPPI and superintendents coast groups about May 1. They will bear return stamped post cards for reservations. These will go to the Hotel Gearhart at the Pacific Coast resort town and the hotel management and a convention committee will assign rooms.

There will be separate and joint pulp and paper making sessions on Friday and Saturday of that weekend. Among papers scheduled for presentation will be one on trends in paper machine design by J. E. Goodwillie of Beloit Iron Works.

Here are the five contestants in 1945-46 Shibley Award Contest, for best paper written by operations employees in Pacific Coast mills and presented at TAPPI meetings. TAPPI National President G. W. E. Nicholson will present the award as a concluding event of the annual joint spring meeting at Gearhart, Ore., on the final day, Saturday, May 18.

Pictures continue in first column of next page.

See next page also for a recent picture of Mr. Nicholson.



Russell Graff, of Longview, Wash., Longview Fibre Co., whose paper "A Study of Cottrell Precipitation Operation" is published in this issue.



Peter M. Wilkie, of Camas, Wash., Crown Zellerbach Corp., whose paper "Some Practical Aspects of Douglas Fir Pulping" was published in the March 1946 issue.



Oliver P. Morgan, of Longview, Wash., Weyerhaeuser Timber Co., whose paper "Viscosity Control in Production of Bleached Pulp" was published in the Feb. 1946 issue.



William Pittman of Longview Wash., Weyerhaeuser Timber Co., whose paper "Extraction of Tannin From Waste Western Hemlock Bark" was published in our Dec. 1944 issue. There was no award in 1945 because of cancellation of many meetings and so the paper is entered in this year's contest.



William F. Abbott, of Bellingham, Wash., Puget Sound Pulp & Timber Co., whose paper "Recovery of Sulfite Waster Liquor From Blow Pits" is published in this issue.



LIEUT. JOHN E. BECKER, U. S. Army Air Force armament officer and son of Folke Becker, President of Rhineland Paper Co., Rhineland, Wis., is shown here during a recent friendly visit with two top executives of Union Bag & Paper Corp., in Savannah, Ga.

LEONARD DOYLE (left) is General Sales Manager and G. W. E. NICHOLSON (right) is Vice President in charge of all Union Bag manufacturing. In late February Mr. Nicholson also was elected National President of TAPPI. He will attend Gearhart, Ore., meeting in May.

Lieut. Becker has been stationed in Florida and Hunter Field, not far from the big Savannah mill.



When Donald Gordon, chairman of Canada's Wartime prices and Trade Board, Ottawa, visited Canada's west coast recently he visited Powell River's President Harold S. Foley.

THESE MEN WERE INVOLVED in recent changes at the Port Angeles, Wash., mill of Rayonier Incorporated.

(Left to right) FRANK BARTON, Assistant Safety Supervisor; ED SHERMAN, Personnel and Safety Supervisor; FLETCHER LAKE, Assistant Personnel and Safety Supervisor, and HARRY THURLOW, Resident Engineer.

Mr. Thurlow succeeded Meder Johnson, when the latter was promoted to Assistant Resident Manager. Mr. Thurlow's father, the late Coast manager for Moline Malleable Iron Co., was widely known in western forest industries.

The Personnel and Safety Department at Port Angeles was reorganized when S. W. Grimes moved to Portland, Ore., to become Field Representative for the Pacific Coast Association of Pulp & Paper Mfrs.



\$10,000,000 NEWSPRINT MILL PLANNED AT ALABAMA SITE

INCORPORATION papers have been taken out by the Coosa River Newsprint Company with the announced purpose of constructing a \$10,000,000, 200-ton-per-day newsprint plant at Childersburg, Ala., with contemplation of the use of the wartime plant of the Alabama Ordnance Works. The establishment of a paper mill at Childersburg, about 30 miles southeast of Birmingham, in east central Alabama, has been advocated for some time.

Under the charter, Donald Comer, chairman of the board of Avondale Mills, a textile establishment, will serve in the same capacity with the new company. J. W. Brown, Jr., president of the First National Bank of Sylacauga, will serve as president; and E. L. Widemire of Sylacauga, will be vice president.

Directors include: Thomas W. Martin, president Alabama Power Co.; Clarence B. Hanson, Jr., publisher, Birmingham News and Age-Herald; Walter Bouldin, a Birmingham attorney. The application for

charter is an outgrowth of the Talladega County War Plants Conversion Committee's efforts to bring about the practical utilization of the ordnance works.

Mr. Hanson is chairman of the newsprint committee of the Southern Newspaper Publishers Association, which has sought the establishment of a newsprint mill in the Southeast to serve the newspapers in the same manner as Southland Paper Mills, Inc., Lufkin, has provided paper for the newspapers west of the Mississippi. J. E. Sirrine and Co., Greenville, S. C., has functioned as consulting engineers in connection with promotion of the use of the Childersburg arsenal.

According to Hugh F. McElderry, manager of the Talladega Chamber of Commerce, it has been indicated

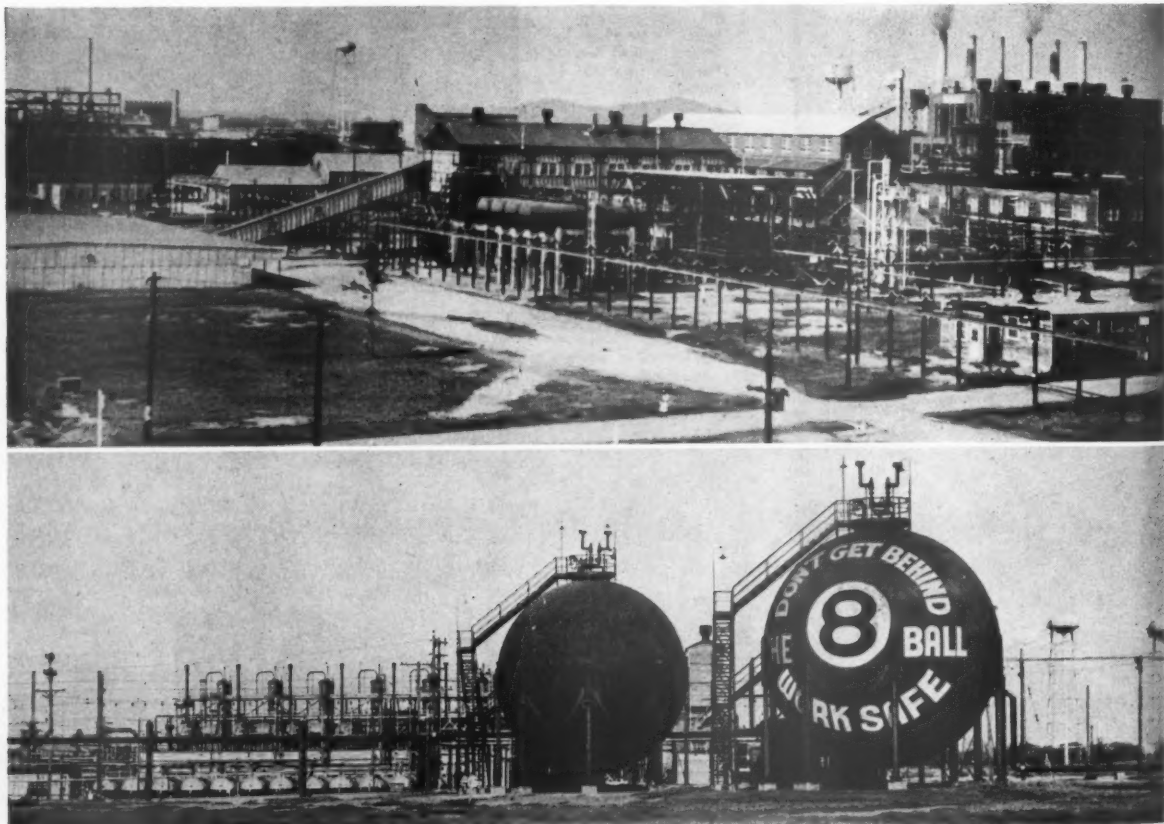
that should utilization by private capital of the ordnance works be provided, these facilities would be released for such operation.

The plant is four miles north of Childersburg and occupies 14,000 acres. It is served by the Central of Georgia and the Atlanta, Birmingham and Coast Railroads, while the Southern is available at Childersburg. Water for the project is supplied by three pumping stations, rated at 209,000 gallons per minute total capacity.

Two filter plants with capacity of 23,000,000 gallons and 10,000,000 gallons per day, respectively, supply process and drinking water. There is a modern sewerage disposal plant.

Two power plants serving the ordnance works are rated at 25,000 and 15,000 kilowatts respectively. They are equipped with 180,000-lb.-per hour boilers and 5,000 kilowatt extraction type turbo generators. The larger plant is equipped with six boilers and five generators, and the

Below are two views of Alabama Ordnance Works, located at Childersburg, Alabama, near Birmingham, which will be taken over by the Coosa River Newsprint Co. for conversion into newsprint mill. Presumably some of these buildings and other facilities will be used.



smaller with four boilers and three generators. Pulversized coal is used for fuel.

The plant has been served by two war-made villages, one of which is of permanent construction type, and one which provides temporary housing. The project, employed as many as 20,000 persons at its peak.

The Coosa River, under plans for improvement of the waterway, will provide inland water navigation for handling of the products that might be produced at the Alabama Ordnance Works. Talladega, which is the county seat, is located in the northeastern section of Alabama 60 miles from Birmingham; 90 miles from Montgomery, the state capital; and 125 miles from Atlanta. It is 600 feet above sea level and

has served as the county seat of Talladega County since 1833. Its population as of 1943 was estimated at 15,760.

The community is well served as an old Southern city by excellent schools, libraries, hospitals and other public features. Talladega was founded on a site famed for its beauty. Noted points of interest in the area include the Shocco Springs, in the foothills of the Blue Ridge mountains; Cheaha Lake which is 1200 feet above sea level, and the Talladega National Forest.

Talladega prides itself on its Southern hospitality. The Purefoy Hotel is listed in Duncan Hines' "Adventures in Good Eating." Talladega County has a population of 51,000, and its resources include clay.



DONALD COMER (left) Chairman of Board of Coosa River Newsprint Co. and one of its moving spirits. Mr. Comer is also Chairman of Board of Avondale Mills, well known textile corporation.

CLARENCE B. HANSON, JR. (right), Publisher of Birmingham News and Age-Herald, Chairman of Newsprint Committee of Southern Newspaper Publishers Association, and a Director of Coosa River Newsprint Co., organized for the conversion of the Alabama Ordnance Works into a newsprint mill.

Louisiana State to Study Southern Stream Pollution Problems

Ninety per cent of the pulp and paper industry of the South were represented at a meeting of the National Stream Improvement Council last month at the Edgewater Gulf Hotel, Edgewater Park, Miss. Arrangements were put under way with the Louisiana State University, Baton Rouge, whereby the institution will undertake research in connection with stream pollution problems.

Principal problem affecting the Southern industry results from the discharge of waste from kraft pulping operations. According to Russell L. Winget, executive secretary of the National Council, the maximum capacity runs of the industry since 1939, together with increased use of Southern rivers for industrial, municipal and recreational purposes, has resulted in troublesome conditions in certain periods of ebb flow. But, he pointed out, the pulp and paper industry wastes do not constitute the major problem, for other sources of pollution are domestic sewage, varied industrial wastes, oil field brines and vegetation decay.

The meeting indicated that the probable solution to the kraft problem lies in supplementary treatment of such very dilute waste liquids that escape the evaporating and incineration process. The Louisiana University research will concern itself largely with such treatment of these dilute kraft mill effluents by bio-chemical methods. The Institute of Paper Chemistry at Appleton,

Wis., under National Council auspices, is investigating pollutional characteristics of kraft mill effluents. The University of Alabama, and the Agricultural and Mechanical College of Texas are also undertaking independent investigations of certain phases. They will coordinate with the Louisiana State program.

Included in the mills represented at the Edgewater Park meeting were: Southern Kraft Division, International Paper Co.; Hollingsworth & Whitney, Gulf States Paper Corp., Brunswick Pulp and Paper Co., Rayonier Incorporated, Masonite Corp., Gaylord Container Corp., Southern Advance Bag and Paper Co., Champion Paper and Fibre Co., Southland Paper Mills, Fleming and Sons, Inc., and National Container Corp.

Wisconsin Project

At a meeting held at the Institute of Paper Chemistry, Appleton, Wis., on March 15, plans were completed whereby the National Council for Stream Improvement will take over all of the activities of the Wisconsin Kraft Waste Disposal Committee.

This work was started in 1941 under Dr. Arch Cole of the University of Wisconsin, and was established as a project at the Institute of Paper Chemistry in 1943. The nature of the research conducted was in con-

nection with determining the relative toxicity of black liquor constituents on fish life.

In 1945, at the suggestion of the Kraft Waste Disposal Committee, the National Council sponsored and financed an intensified research project relating to the effect of kraft wastes on aquatic life, including such aspects as determining the effect of effluents on micro-fauna upon which fish feed and the analysis of toxicity testing methods.

At the meeting last month, the committee voted to terminate its activities as an independent group and to carry on its future activities with the same personnel, as a committee of the National Council. An extended and intensified program will be carried on during 1946. This program will, in addition, develop the research findings to mill application. This will include developing toxicity tests which can serve for actual mill control tests.

The meeting was attended by representatives of Thilmay Pulp and Paper Co., Tomahawk Kraft Paper Co., Mosinee Paper Mills, Nekoosa Edwards Paper Co., Stevens Point Pulp and Paper Co., and John Strange Paper Co., Mr. L. F. Warrick, state sanitary engineer, also attended.

Paper Man Honored

H. E. Hornberger, editor of "The News Bag" of the Gulf States Paper Corp., Tuscaloosa, Ala., was recently elected a regional director of the American Association of Industrial Editors, Inc. He represents the southern division.

Mill Superintendents Are Learning More About Quick Wire Patching

Since Jesse A. Harris, paper mill superintendent of the West Linn, Ore., division of Crown Zellerbach Corp., started applying home made patches to wire cloths at his mill in five to eight minutes, back in 1942, and Fred R. Riley, paper mill superintendent of Powell River Co., was simultaneously doing original work of similar nature up in British Columbia, a lot of pulp and paper mill superintendents in the United States and Canada have had a lot of experience with rapidly-applied patches.

They have been assisted in this with patching outfits which are no longer a novelty in the mills and are readily obtainable. A carbon wheel for welding and patching cloth of lighter gauge than the machine cloth are used. A Canadian wire manufacturer bought a number of these outfits in the United States and gave them away to his customers and reports that about half of them are being used.

The experience of mills so far indicate that these fast stick patches are successful only over small areas and usually on wires which were damaged when they were still quite new. Thus, the patch has certain limitations but is profitable in uses where mills have had minor or unfortunately early difficulty with wires. There are no responsible paper or pulp mill superintendents who suggest it as any kind of "cure-all" and more and more experience is being accumulated in its use.

A number of superintendents have told PULP & PAPER INDUSTRY that wire company representatives have generally been helpful and it is believed that in reporting some of these experiences, others may be similarly assisted.

The quick patch appears to be an adaptation of the original idea developed by Mr. Harris. His method consisted of applying a patch, with enough wires clipped to a depth of one-fourth inch so the remaining ones might be inserted in the Fourdrinier mesh and be clamped against, instead of into, the line of roller motion. This, in turn, had developed from the older method of patching by sewing. Mr. Harris's method was illustrated and described in the Nov., 1942 PULP & PAPER INDUSTRY.

The fast stick patch now being widely used has been found successful on pulp machines and also

OUR COVER PICTURE—

shows the obverse and reverse sides of a patch on a Fourdrinier cloth, after the cloth had run out an additional 36 days at a Pacific Coast kraft mill.

This is a second patch on this wire. One patch ran for ten days, and after a second hole developed in the same area, the two were patched together for the remaining 36 days the wire continued in use.

The original hole measured only $\frac{3}{8}$ inch in diameter. This ultimately grew to be $1\frac{1}{8}$ by $\frac{3}{4}$ inches and another new hole developed to $1\frac{1}{4}$ by $\frac{5}{8}$ by the time the wire was discarded.

The cover picture shows an illustration of the patch enlarged to 1.6538 times the original patch size. It will be noted in the reverse side view that there is no clogging of suction holes.

In November, 1942, we published a cover picture showing an enlargement of a quickly applied wire patch developed by Jesse A. Harris, paper mill superintendent at the West Linn, Ore., division of Crown Zellerbach Corp.

in mills making various kinds of paper from bond to kraft.

Mill Experiences

A Pacific Coast kraft mill superintendent says the patch is easily applied, within limitations, being merely centered over the worn area, and then the carbon wheel, adjustable to any heat, is attached by plug to any 110-volt alternating circuit. This welds the patch to the parent wire.

A big sulfite pulp mill found that its 15 machine tenders each had different ideas of how to use it, some having good luck and others not so good. So it was finally decided by the general superintendent that only three machine tenders would be authorized to use it.

One superintendent suggests that if the patch material did not require so much heat to apply, or if the patching bronze wire would melt for annealing at a lower temperature than the Fourdrinier cloth itself, a better job would result. Almost everyone agrees that the pressure necessary to do a good welding job leads to dishing of the cloth, which causes the repaired hole to wear much more rapidly until its edges approach the edges of the welded patch.

Another superintendent suggests that if the patch does not stick on the first application, that the carbon wheel can be run over it again to complete the annealing, but warns that too much pressure will ruin the job.

In one of the big western kraft mills, a powdered silver solder is utilized, because it was found to give a better bond between the patching cloth and the wire itself. All excess solder is cleared away easily through applications of either air or steam so that none of the suction holes of the cloth are filled to de-

stroy the utility of the mesh. The holes in all but a few instances remain unclogged, also through annealing of the applique mesh to the Fourdrinier cloth. An example is shown in our cover picture. No effect is evident on the paper sheet through either method. Furthermore, the patched area seems to function in expected manner whether under light or heavy vacuum cup pressure.

The same patching method has also been used in one mill for repair of wire cloth or cylinder molds.

The outfit has been successfully used on twisted cable weave No. 24 mesh wire cloth at a big sulfite pulp mill. Here a wire was injured within only two weeks after it was put on. It was patched so successfully that it ran for five months, but several patches were used, one of them lasting six weeks. A patch as large as 4 x 6 inches was used.

Limitations

It was found that if the wire becomes too old, the patch does not stick very well. It is necessary to clean and dry the area thoroughly, this mill applying a cleaning brush and blowing air on it to dry it. Another mill uses an infra-red lamp with a six-minute application.

Ordinarily, the method is regarded as of little value for breaks or holes much larger than $\frac{3}{4}$ to one-inch initial break.

Experience in some mills at which inquiries were made by PULP & PAPER INDUSTRY indicated that lengthwise slits cannot be handled because of couch roll and wire roll flexings. Large hole patches do not stand up well in use.

One mill superintendent says that patch results are better on a straight Fourdrinier machine than on a pick-up machine. The mill operates both types, so this comment can be as-

sumed to be authoritative rather than experimental.

Patch materials are now being sent out to mills with the tabs to be inserted through small holes so the wire will ride on the tabs against the rolls.



O. E. S. HEDBRING has been appointed Assistant to the Vice President in Charge of Production, United Paperboard Co., and will make headquarters at the Thomson, N. Y., mill. A graduate of the University of Washington, Seattle, he was formerly with pulp mills in the Pacific Northwest, with Southern Kraft Div., International Paper Co., Georgetown, S. C., Continental Paper Co., and Ohio Boxboard Co.



ARTHUR SCHROEDER, President of Arthur Schroeder Paper Co., 420 Lexington Ave., New York 17, new sales agency for output of Pejeboscot Paper Co., Brunswick, Maine. As announced in Feb. PULP & PAPER INDUSTRY, this mill, at present manufacturing only groundwood specialties, has been purchased by Hearst Consolidated Publications. Mr. Schroeder said his sales company expects to make other mill connections "as time goes on."

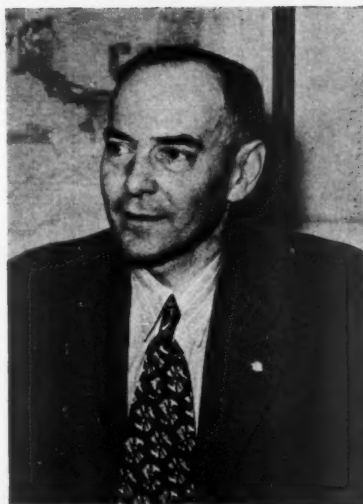
Patching seems to produce satisfactory results on all wires from 55 mesh up to 80 mesh and was praised by one superintendent in these words: "It is far ahead of other methods, but one must learn how to handle it."



R. J. TRIPP, lately a Lieut.-Colonel in the U. S. Army Field Artillery, has been appointed Manager of Paper Sales of Longview Fibre Co., with headquarters in San Francisco. Mr. Tripp replaces Douglas H. Cairns, who resigned to become manager of Paull Printing Co., Seattle. Mr. Tripp is a graduate of Stanford University and Stanford Graduate School of Business Administration. Before joining the Army he was with Crown Zellerbach Corp. at Camas, Wash., and San Francisco. He saw action in New Guinea and the Philippines.



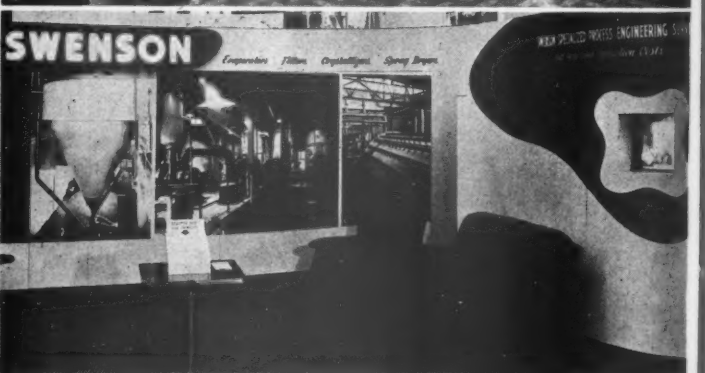
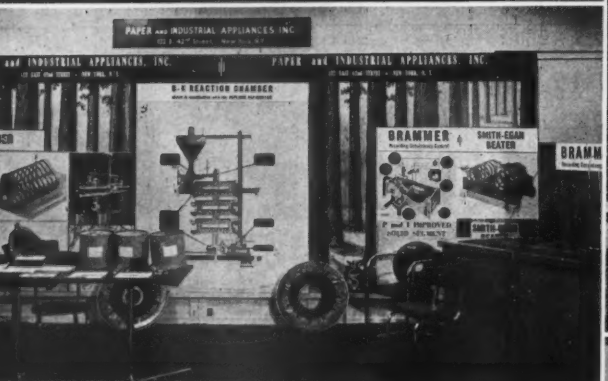
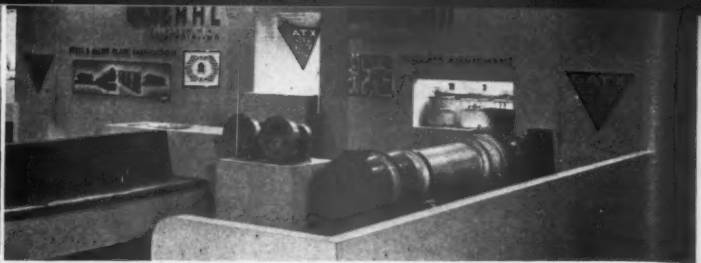
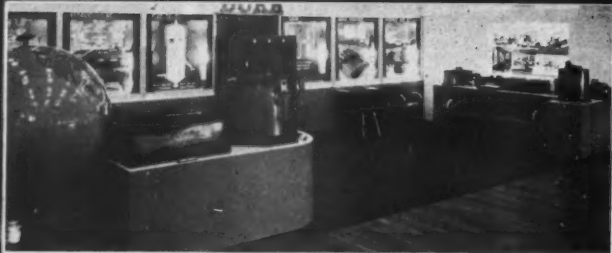
J. W. GENUIT, of Fernstrom Paper Mills, Pomona, was elected President of the Paper Mill Men's Club of Southern California, a sales group, at the March meeting in Glendale, Cal. Newbey Green, of Crown Willamette Paper Co., Los Angeles, was elected Vice President; G. N. MADIGAN, of Johnson, Carbell & Murphy, Secretary, and Tom Bruffy, of Dabeckmun Co., Treasurer.



F. CLARK LEWIS, who has returned from the wars to the place he filled from 1931 to 1942 as Mill Sales Representative for the Pulp Division, Weyerhaeuser Timber Co., Longview, Wash. A "retread" from World War I, Mr. Lewis entered service in 1942 as Captain with the Army Transportation Corps. He was in Alaska 16 months, as a Major, and from there was flown via New York, which he left on D day, direct to Southern England as a staff officer for material handling specializing in barge and tug control during the landings on the continent. There he served as Lieut. Colonel.



HOWARD C. GRAHAM, who served as Lieut. Colonel in U. S. Army Ordnance during war, has joined Central Technical Dept., Crown Zellerbach Corp., Camas, Wash., as Assistant to the Technical Director. Mr. Graham was Inspector of Ordnance at Radford, Va., and later Charleston, Ind., Ordnance Works from 1940 to 1946. Most of nitrocellulose for army was made from Pacific Northwest wood pulp. A graduate of University of Washington, Mr. Graham served at C-Z's Port Angeles newsprint mill from 1934-39 in laboratory, finally as Technical Supervisor and in 1939-40, he served the Central Tech. Dept. on assignment to all the company's newsprint mills. Married; has two children.



f
-
o
o
n

n
n
n
a

e
o
in
e
p
o
la
ra
m
ex
ch

U
pr
an
w
lo

n
In
Pr
sid
go
ing
or
ply

vil
rei

T
tio
pul
zin
me
pap
com
this

PI
ON
"
on
Cor
sess
T
The
istry
F
trek
retu
Apr

Wood Pulp Ceilings Prices Raised

The long-awaited and fought-for break in OPA woodpulp ceilings—the first since early 1944—cracked on April 11 with an announcement of increases in producers prices of nearly 10 per cent.

The action was taken by OPA on the basis of assurances that it would materially increase pulp supply and nearly all observers were in agreement that it is bound to have favorable effect.

The Swedish interests were generally pleased, albeit thinking they ought to have received more of an increase for bleached pulps. However, they expect it will step up imports when the shipping season opens up again in May. Despite lack of coal, a Swedish production rate of 65% can be expected, this making available 1,700,000 tons for export to all countries in 1946 (including stocks).

As for domestic production, the U. S. pulp mills under the new prices will be encouraged to go out and get marginal wood. In the west, where the big market pulp mills are located, a wood closer utilization

Grade	Old Price	New Price
Bleached softwood sulfite.....	\$86.00	\$94.00
Unbl. softwood sulfite.....	74.00	82.00
Bleached hardwood sulfite.....	83.50	91.50
Unbl. hardwood sulfite.....	71.50	79.50
Northern bleached sulfate.....	86.00	94.00
Southern bleached sulfate.....	79.00	88.00
Northern semi-bl. sulfate.....	82.00	89.00
Southern semi-bl. sulfate.....	75.00	83.00
Northern unbl. sulfate.....	73.00	82.00
Bleached soda pulp.....	76.00	84.00
Unbleached soda.....	72.00	80.00
Groundwood.....	50.00	58.00
Gr'd., paper machine dried.....	53.00	61.00

Screenings, sulfite-sulfate and groundwood are raised \$2.00 per ton. Side runs will take the same increase as corresponding grades listed above. Standard newsprint side runs are raised to \$58.00 from \$50.00. The order will carry specific raises for special types such as glassine pulps and they will carry increases corresponding to the grades listed above.

"revolution" is in the making, with plans for using small wood which formerly was left on stands as impractical to log. The price increases should accelerate this movement.

Of course, the domestic producers have been doing their best in the face of bad winter conditions and increases may not be great. But the

new prices will make for a lot more health in the domestic industry, what with rising production costs in materials and labor.

Parallel with the OPA price increases comes reduction on the transportation charges payable by producers of wood pulp. There is a reduction of \$1.00 per ton maximum for all western Canadian and western domestic producers; a reduction of \$2.00 for eastern Canadian producers; and a reduction of \$3.00 for overseas producers below \$7 maximum freight absorption. This should enable Swedes to ship to many more inland American customers, whom they had denied pulp supplies because of freight costs.

Asks OPA Suspension

The newsprint industry advisory committee has asked OPA to suspend price controls altogether on its product. OPA said it would take the recommendation under consideration. John K. Hobson, St. Croix Paper Co., Boston, chairman of the advisory committee, presided at the meeting at which were John R. Cowles, Maine-Seaboard Paper Co.; Harold Nichols, Crown-Zellerbach Corp.; and C. B. Stanwood, Great Northern Paper Co.

Government Purchase of Mills May Be Spurred by Publishers' Action

Two recent lengthy communications received by PULP & PAPER INDUSTRY from the office of the U. S. Printing Office (printed on only one side of the paper) states that the government is considering acquiring its own printing paper mills in order to assure it a continuing supply of this kind of paper.

The office also has asked the Civilian Production Administration to reinvoke war powers and controls.

The reports which this publication received confirmed the article published exclusively in this magazine last month reporting government consideration of going into papermaking business and thus competing with private industry in this field.

A. E. Geigengack, public printer of the United States, says "the plan is only being talked about now" but if approved, the government might follow the lead recently taken by Life-Time-Fortune, Curtis Publications and the Hearst organization, and purchase or lease one or more paper mills.

In the past few months these publishing companies, or their suppliers or representatives, have purchased, or leased the entire output, of two mills in Maine, one in Pennsylvania, one in Michigan and two in Minnesota.

Mr. Geigengack complains that this trend among the big publishing houses has removed sources of supply from the government. He admitted government emergency ap-

peals did not constitute satisfactory long-term arrangements for mills, but said government authorities showed "little patience with my excuses."

Natwick Daughter Marries Army Flier

"Mr. and Mrs. Albert Guy Natwick of Washougal, Wash., have announced the marriage of their daughter, Phyllis, to Mr. Joseph T. Hallock, son of Mr. and Mrs. Joseph Hallock, of San Francisco, formerly of Portland."

That's the way the society pages reported it. But to pulp and paper industry leaders all over the country, the bride's father is better known as A. G. "Buff" Natwick, assistant resident manager of the Crown Zellerbach mill at Camas, Wash. The bride's mother is a former Republican state committeewoman and her brother, Ben, is western representative of Appleton Wire Works.

The wedding took place in Eugene, Ore., on Feb. 4.

The bride is a well known young concert pianist, who has made a number of appearances in Pacific Coast cities, and recently she won the right to represent her district in the finals of a contest in New York City sponsored by the National Federation of Music Club.

Her husband served as a captain in the U. S. Army Air Forces in Europe during the war and was shot down over Germany. He escaped by hiking to safety in Switzerland. He is finishing his college education at the University of Oregon in Eugene.

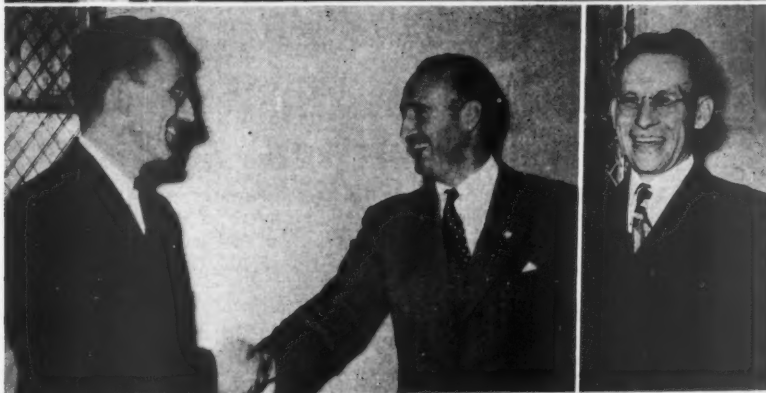
PICTURES ON OPPOSITE PAGE OF A PAPER WEEK "SIDE SHOW"

"These scenes were from the 1946 Chemical Industries Exhibition, held on three floors of the huge Grand Central Palace, not far from the Commodore and the Waldorf-Astoria where the TAPPI and AP&PA sessions were simultaneously in session in New York in late February.

This might have been more properly termed a chemical appliance show. The varied exhibits, nevertheless, did give a splendid review of chemistry at war and a preview of chemistry tomorrow.

Foot-sore but interested, hundreds of Paper Week convention-goers trekked the long aisles between exhibits in the late afternoons, some returning after dinner to stay until "lights out" at 10 p. m.

CAMAS PAPER SCHOOL HOLDS ITS 13TH GRADUATION



SCENES AT PAPER SCHOOL GRADUATION:
Top: Dean A. G. "Buff" Natwick, who is also Assistant Resident Manager at Camas, congratulates Gordon Nast, of West Linn, who was top honor student in the four-year class. A. B. Layton, Vice President, looks on, smiling.
Next row, Robley Butler, 1943 top honors winner and a returned service man, being congratulated by Mr. Layton, and Halbert Hinze, of Camas, who won second place

among this year's fourth year students. Prize for Messrs. Nast, Hinze and Butler is an expenses-paid trip to Pacific Northwest pulp and paper mills.

Below: Girl graduates of first year (left to right): Marguerite and Ellen Fox, both of Portland office; Doris Carey, Mrs. H. R. Gayer and Margery Dayer, of Camas. Next is Dean G. W. Gleeson, of Oregon State College, who made principal address.

That unique institution, the industrial college with accredited standing for employes on the job in their own industry—Crown Willamette Paper School—held its 13th annual graduation at Camas, Wash., on March 19. Eighty-four students received certificates of completion. Of these were 42 for work which satisfied requirements of the first year course; 22, in the second year; 10 in the third year; and 10 for completion of a full four-year course with diplomas significant of final graduation. One other student who had filled all requirements toward the final diploma, but whose enlistment in the armed forces prevented appearance, was likewise honored with his diploma.

Honor awards for best sustained efforts throughout the respective courses were likewise granted as follows:

First Year Course

First Honor Ross Trieman
Second Honor Virginia Knuth
Honorable mention ..Herman W. Byers
Honorable mention ..Albert O. Muench

Second Year Course

First Honor Vincent McDonald
Second Honor Margaret Whipple
Honorable mention ..Charles Zorn
Honorable mention ..Harold Johnson

Third Year Course

First Honor Jack Krank
Second Honor Oscar C. Wheeler
Honorable mention ..Leon Semke
Honorable mention ..E. P. Franklin

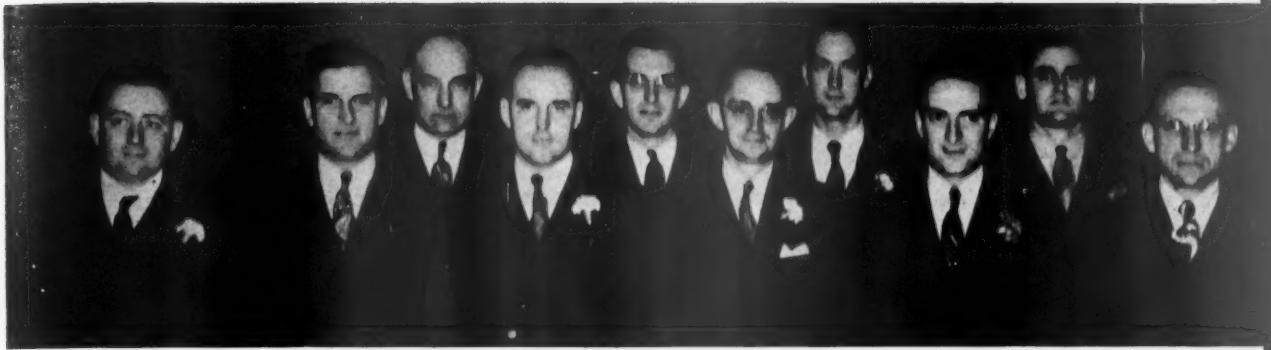
Fourth Year Course

First Honor Gordon Nast
Second Honor Halbert Hinze
Honorable mention ..Peter Wilkie
Honorable mention ..Fred Maffei

Various gifts were made individually to these students, including subscriptions to PULP & PAPER INDUSTRY, and fourth year honor winners were given a tour of one week's duration through northern mills of the Pacific Coast, with all expenses paid.

The trip was also a gift to an ex-service man and returned employe, Robley Butler, as he had won top honor for his class in 1943.

Other matters of interest concerning student activities were these: Attendance by third and fourth year students during the 16 weeks' of night lectures reached 98%, to shatter all previous records; three fourth year students (Gordon Nast, F. Merville Mighells, and Fred Maffei), compiled a 14,000-mile "Odyssey" of travel from West Linn, Ore., for classes; three Camas sisters, the



Those who finished the four-year course of Crown Willamette Paper School and received diplomas of final completion were: (left to right) F. M. Nighells; I. J. Rivines; Roy R. Trutton; Gordon Nast; Robley Butler; Joel Edwards; Carl Loran; Fred Maffei; Peter Wilkie; Halbert Hinze. William McGill was unable to appear in the picture.

youngest 17 years old, completed the first year together (Doris and Mary Outcalt and Mrs. H. R. Gayer).

Tribute was tendered former students who died in military service by Toastmaster W. D. Welsh, San Francisco. They were Curtis Barnett, Laurence C. Koplin, Eugene R. Brundage, Clarence Eugene Osborne, Leonard Barton Conway, Eugene Pershin Shawvin and Robert Charles Tracy.

A banquet in the Camas High School gymnasium, at which students, faculty, guests and friends to the number of 255 gathered, served to mark the evening indelibly as terminus for another school year.

Resident Manager J. E. Hanny

welcomed everyone and noted the difficulties attendant upon keeping the school functioning during the war, but emphasized "I'm glad we did." He thanked instructors who came from other companies in pulp and allied industries.

George W. Gleeson, dean of the school of engineering and industrial arts, Oregon State College, gave the graduation address. He termed the school "an experience by way of education, refreshing to us."

Of the push-button age, he added, "We will have this, that, and the other, until we won't have time to live because we have so many buttons to push, in a civilization based on luxuries, so that we clutter up

life with things rather than thoughts."

"The urge of man to find out something new" has started us on a technological spiral which is now tightening, he said, with the first three-fourths of man's existence passing before he began to set down a record. Things technological are so hurriedly achieved of late that one can scarcely keep up. He said that in the period of the war we compressed the equivalent 30 to 50 years' development, which arrived at the end result of things visualized but never before accomplished. He cited sulfa drugs, penicillin, synthetic quinine, analgesics, anesthetics, jet propulsion, combustion and thermo-combustion turbines, syn-

The third year certificate winners are: (left to right) Lawrence Dunga, Sr.; William Scott; Jack Krank; Ed Franklin; Harold Coe; Leon Samke; Henry St. Lawrence; Lester Schatz; Oscar G. Wheeler. Glen Gunderson was unable to be present for the picture.



Completing the second year course were: (left to right) Roland Reiman; Donald Cross; Muron Doty; Charles Zorn; Vincent McDonald; Harold Johnson; Matthew Haslett; Margaret Whipple; Robert Tueth; Jean Hewett; Delbert Knapp; Mary Bowers; Harry Bowers; Eugene McGill (back row); Ralph Hallin R. T. Carter; Geno Quilici (back row); E. R. Aslin... Others not in the picture were John Corley, J. O. Dougherty, Henry Husby and Conrad Wilkin.





Those finishing the first year included: (left to right) Owen Smith; Herman Byers; Wendell Myers; Kenneth Powell; (back row) D. A. Holland; Fields Nelson; Albert Muench; Sidney Pierce; Charles Butler; (back row) Ross Trieman; Mary Outcalt; Ted Knuth; (back row) Marjorie Wagner; Doris Outcalt; Ralph Holman; (back row) Marguerite Rondeau; Martha Rapsavage; Richard Watrous.



Others finishing the first year were: Otto Eckman; Doris Carey; Robert Johnson; (back row) Kay Goodwin; Marjorie Gayer; Earl Bush; (back row) Lionel Woodworth; Donald Larios; Thomas Shurm; Erma Powell; John Kaminsky (back row); Mark Holliday; Kenneth Weidman (back row); Marguerite Fox; Raymond Janz; Virginia Knuth; Cletis Malcolm; Ellen Fox; Helma Sherman. Not in the picture were: Robert Allen; Edwin Davenport; Ross Manganaro; Louis Seekins; Ralph Shivers.

thetics, high polymer discoveries, triplane and R. and Q. alloys. He told students only 5 men were required to push buttons in a synthetic rubber plant as big as the Camas mill, and stated that the atomic processing at nearby Hanford led to products no one ever saw although all could be felt or measured.

He held that if political and economic controls and philosophy had followed as consistent a pattern of development as the technological scientists, a great many of our present difficulties would not exist.

A. B. Layton, vice president of Crown Zellerbach Corp. and a recently released commander of the U. S. Navy, presented the diplomas, and expressed his company's appreciation of recognition afforded the paper school by Oregon State College and University of Washington through granting of academic credit which identifies the work done. He expressed pride that the two mills represented in the classes "produce men and women who can produce paper and paper bags, rather than being plants just to produce paper and paper bags."

A. G. Natwick, dean of the school and assistant resident manager at Camas, visualizing the widening of the paper school's influence, mentioned inquiries from India, Russia,

Norway, Sweden, Finland, and even Germany for specific information.

The evening ended with Toastmaster Welsh's tribute in "A Walk Down Memory Lane" to the seven imperishable names of Gold Star former students.

Names of those completing the work for various years are listed beneath the photographs accompanying this article.

Swedish Vessels Booked for Months

Every berth on the M.S. Gripsholm and the S.S. Drottningholm is booked for three months ahead, Swedish American Line, New York office recently announced. Several hundred persons are on the waiting list. Reservations have even been made for Christmas sailings.

The same holds true of Swedish ships from the Pacific Coast.

Moffitt Named Sales Manager Of Penn Salt of Washington



THOMAS E. MOFFITT whose appointment as sales manager for Pennsylvania Salt Manufacturing Co. of Washington, Tacoma, Wash., was announced this month by Fred Shaneman, president of the company.

Since 1923, when he became associated with the late Guy C. Howard at Seattle, Mr. Moffitt has been identified with chemical and pulp industries of the West. During most of past year he was engaged in special investigations for Weyerhaeuser Timber Co. Before that he was for many years engaged in sales to the chemical consuming industries for Hooker Electrochemical Co. and, at one time did special development work for I. F. Laucks, Inc.

Mr. Moffitt is a veteran of World War I, and served in 1940 and 1941 as a Captain in the Army. He is a graduate of Cornell University, where he majored in chemistry.

TAPPI Group Hears About Forest Management

"Forest Management"—a comparatively new science which is inextricably bound up with the future of their jobs and of this industry—was the subject for the panel discussion of the Pacific Coast section of TAPPI at Bellingham, Wash., on April 2.

This was the last of the 1945-46 season of bi-monthly afternoon-and-dinner meetings and the round table was a natural sequel to the one held in February on waste wood utilization. The choice of these subjects indicated a growing awareness among the technicians of the efforts to put their industry's resources on a permanent basis.

After a Shibley contest paper had been presented by William F. Abbott, chemist at Puget Sound Pulp & Timber Co., on "Recovery of Sulfite Waste Liquor from Blow Pits" (see page 42), the chairman, Harold Bialkowsky, technical director, Pulp Div., Weyerhaeuser Timber Co., Everett, Wash., turned the meeting over to the foresters and their cohorts.

Ed F. Heacox, forester of Weyerhaeuser Timber Co., was the moderator, assisted by Col. W. B. Greeley, chairman of the board of trustees of the American Forest Products Industries, Inc., and former U. S. Chief Forester; Axel J. F. Brandstrom, of Portland, Ore., who recently resigned as forester for Crown Zellerbach Corp. to establish his own office as forestry consultant, and Albert Arnst, a lecturer on forestry matters.

At the dinner which followed this session, both being held in the Hotel Leopold, Dr. Arthur Hicks, head of the English department, Western Washington College, Bellingham, was the principal speaker. In a talk he entitled "Voices of Doom," he reviewed postwar international developments, balancing against what he called the "mistakes" of the U. S., Britain and Russia, some of the less publicized achievements already accomplished by the United Nations Organization. He thought these outweighed peace-disturbing events.

Sulfite Liquor Recovery System

In his paper, Mr. Abbott presented a description of a sulfite

April 1946



WALTER D. FULLER (left), President of Curtis Publishing Co., who also has become an active executive of the paper industry since his firm recently acquired operations of the New York & Pennsylvania Co., declared at a New York meeting last month that publishers are becoming cognizant of the need of growing trees as a crop. He is shown here with COL. W. B. GREELEY (in middle), new Chairman of Trustees of American Forest Products Industries, Inc., and CHARLES E. MOREAU (right), of National Editorial Ass'n. MR. FULLER, whose company publishes the Post and a number of other national magazines, recently stated that his firm had contracted for one-half the coated book paper which will be produced in place of newsprint at the West Linn, Ore., Division of Crown Zellerbach Corp. The other half of the production from two machines will go to the Time - Life group of magazines



AT BELLINGHAM (left to right):

Top Row: Bob True, General Dyestuff Corp., Sec'y.-Treas., Coast TAPPI; Ray Hatch, Research Director, Pulp Div., Weyerhaeuser Timber Co. and a leader in National TAPPI circles; and Ed Heacox, Weyerhaeuser forester, who served as Panel Moderator.

Lower Row: G. W. O'Brien, Vice President in charge of Forest Operations, Powell River Co., Powell River, B. C.; Lawson P. Turcotte, Executive Vice President, Puget Sound Pulp & Timber Co., and Norman English, newly appointed General Manager of Powell River Co.'s logging operations.



Members of the panel and others who made arrangements for the Bellingham meeting (left to right): Erik Ekholm, former TAPPI Section Chairman; present Chairman Harold Bialkowsky; Albert Arnst; Sydney Collier; Ed Heacox, Panel Moderator; Axel Brandstrom and George H. Galloway, Vice Chairman and in charge of program.



AT BELLINGHAM (left to right):

Top Row: Dr. Arthur Hicks, Western Washington College, who was dinner speaker; Erik Ekholm, General Superintendent, Puget Sound Pulp & Timber Co., and Coast TAPPI Executive Committee-man; Axel J. F. Brandstrom, Forestry Consultant, and Lawson P. Turcotte, Executive Vice President, Puget Sound Pulp & Timber Co.

Next Row: Mrs. Ivan Campbell, who conducted the registration desk (her husband recently returned from war service to resume his duties as Instrument Engineer at Puget Sound Pulp & Timber Co.); Sidney Collier, Assistant Superintendent at Puget Sound, who made arrangements for the meeting, and TAPPI's Coast Chairman, Harold Bialkowsky, Technical Director, Pulp Div., Weyerhaeuser Timber Co., Everett, Wash.

waste liquor recovery system employing existing blowpit equipment as modified and used by the Puget Sound Pulp & Timber Co. in the recovery of waste liquor for alcohol production.

Equipment and procedures were discussed, including the effect of operational variables on recovery efficiency. A brief comparison was made with reported results of Swedish recovery practice. Mr. Abbott concluded that "the efficiency of recovery of sulfite waste liquor from blowpits appears to compare favorably with other methods of recovery employed in sulfite waste liquor utilization industries."

Concerning the Bellingham procedure, he said "the blowpit is padded with 3½ feet of sulfite waste liquor and the digester contents are blown into the padded blow-pit. The stock is allowed to settle for a ten-minute period during which the pulp settles to the floor of the blow-pit, forming a filter mat. A thermostatically controlled valve is opened and the undiluted liquor is allowed to drain from the blowpit. The normal drainage period is 20 minutes. At the completion of the drainage period, water is either dumped or sprayed over the pulp surface forming a water layer which passes through the pulp displacing the waste liquor."

Forestry Session

Col. Greeley launched the forestry round table by discussing "Present and Future Supply of Raw Materials for Pacific Northwest Wood Using Industries." To increase this supply greatly, he urged that government timberlands be brought more thoroughly into use. He said about half the wood potential of this region is on federal or state lands and declared that one-third of all government-owned timber dies "over-ripe" whereas most of it could be used before its span of life ends.

The government, he said, could college stumpage and build the roads for private operations in its stands.

The other half of the wood potential, he said, was divided between private industry ownership and farm lands. Privately-owned lands of large owners, Col. Greeley declared, are gradually going onto a sustained yield basis.

He said a great amount of raw material is lost as young stands fight up to maturity and therefore, periodic thinnings would greatly increase wood for use that otherwise would be lost.

Mr. Brandstrom was asked to give two papers. In the first he discussed the history of better forest management and utilization practices in the

west and its potential benefit to the wood-using industries. His second talk "Importance of Second Growth to the West Coast Pulp Industry" is on page 54 and his first paper is published on pages 29 and 54.

The first time on his feet, Mr. Brandstrom used as the premise of his discussion the recent estimates of Burt B. Kirkland of the American Forestry Association that if all Douglas fir industries operated by modern forestry methods a big increase could be achieved in annual yield.

New pulping processes are now making it possible for western mills to utilize Douglas fir as well as their traditional source of material, the Western hemlock, and, in some cases, second growth Douglas fir is expected to put western pulp mills on a permanent sustained wood supply basis.

Discussing "Farm Forestry as a Source of Wood for the Pulp Industry," Mr. Arnst told how the U. S. agriculture department encourages and interests farmers in tree culture.

ATTENDANCE

Those registered for the Bellingham meeting follow:

William F. Abbott, A. B. Baldauf, Ivan D. Campbell, William V. Catlow, Harold D. Cavin, Sidney M. Collier, E. Ekholm, E. O. Ericsson, S. Gibson, Fred J. Gilmore, G. F. Green, V. C. Haner, W. C. Harvie, G. A. Okerlund, John T. Purvis, Donald L. Reed, D. M. Robbins, Carl V. Sahlin, Walter R. Sewell, Lawson Turcotte, Luella Warriner, and Ralph Wyndham, Puget Sound Pulp & Timber Co., Bellingham, Wash.; Arvid Backlund, Harold Bialkowsky, A. S. Gerry, Alfred Graef, L. R. Hartman, E. E. Hill, Jr., Lester M. Johnson, C. N. Linden, Robert L. Nash, and L. A. Wendt, Pulp Div., Weyerhaeuser Timber Co., Everett, Wash.; Geo. H. Beisse, Charles K. Clark, A. E. Erickson, D. G. Felthous, R. N. Hammond, R. S. Hatch, H. A. Hauff, W. H. Haverman, H. T. Peterson, and R. M. Watts, Pulp Div., Weyerhaeuser Timber Co., Longview, Wash.

Henry E. Becker, John M. Carlson, Norman Heglund, M. J. Hodson, J. H. McCarthy, Murl Miller, A. Orup, Carl A. Ramstad, Oliver E. Ronken, Chas. Stehman, and R. I. Thieme, Soundview Pulp Co., Everett; G. H. Gallaway, and T. R. Goodwin, Crown Zellerbach Corp., Camas, Wash.; J. A. Blake, Electric Steel Foundry Co., Seattle; E. R. Leisure, and R. E. Richmond, Electric Steel Foundry Co., Portland, Ore.; Albert Arnst, Portland; John Ashby, Westminster Paper Co., Ltd., New Westminster, B. C.; Hakon K. Berger, Everett Pulp & Paper Co., Everett; A. H. Brandstrom, consulting forester, Portland; A. M. Cadigan, St. Regis Paper Co., Kraft Pulp Div., Tacoma, Wash.; Wm. M. Clines, and J. B. Sutherland, General Chemical Co., Seattle; J. V. B. Cox, Hercules Powder Co., Portland; R. R. Cox, Walworth Co., Seattle; Arthur Dammann, The Bristol Co., Portland.

Lloyd F. Wray and H. N. Danielsen, Simonds Saw & Steel Co., Seattle; E. Fir-

(continued in first column, next page)

Michigan Superintendents Hear Talk On Mill Uses for Liquid Neoprene

Fifty men present at the Michigan division meeting of the American Pulp and Paper Mill Superintendents Association in Kalamazoo, Mich., on March 21, were addressed by Kenneth P. Chamberlain, general sales manager and a director of Gates Engineering Co., on "Liquid Neoprene and Its Uses in the Paper Industry." The talk stimulated considerable discussion.

Ray L. Barton, national president of superintendents and superintendent at Michigan Paper Company of Plainwell, attended, and Ralph Atkins, division chairman and superintendent at Lee Paper Co., Vicksburg, presided.

Mr. Chamberlain described a variety of uses in the pulp and paper industry for liquid neoprene, durofilm and nitrocote. He discussed briefly the history of these products and the long and costly research from which they emanated. The speaker pointed to solutions of specific problems within the industry which were effected by employment of these coating materials. Among these were the arresting of electrolysis in copper pipes by bonding liquid neoprene to the inner surface in order that residue would not mar finished paper.

The talk was illustrated by passing samples among the audience. Among these were strips of iron and steel bonded with neoprene at 1100 pounds and aluminum with a

550 pound bond. The bond was achieved by spraying liquid neoprene on sand-blasted metal and drying with hot air. Most significant claim for neoprene was that it alone could be bonded on copper. Pipe section with inner and outer neoprene bonding were also distributed as well as materials coated with durofilm and nitrocote.

The speaker explained that neoprene will resist most acids used in pulp preparation. It will handle the fumes from hydrochloric acid but does not resist this acid in solution. One of the more notable economy uses of neoprene is as a lining for wooden white water tanks. The tanks are first lined with plywood to give a bonding surface after which the neoprene is applied.

Both nitrocote and durofilm were developed to meet existing needs within the industry. Nitrocote was developed to resist the action of nitric acid and other bleaching agents which are beyond the range of neoprene. Durofilm came into being to coat concrete beaters in order to eliminate precipitation of scale on wire screenings and thus lengthen life of the screen.

The address, the members and representative attending participated in a long discussion period with the speaker. Attending the Kalamazoo meeting were:

William Astle, A. E. Hayes, J. A. Dean, Ray Barton, J. Sission and J.

L. Waber, Michigan Paper Co. of Plainwell; C. D. Beebe, C. E. Gardner, Leo Seas and Ralph Atkins, Lee Paper Co.; J. C. Barr, Manhattan Rubber Co.; Daniel V. Bergman, PULP & PAPER INDUSTRY; Kenneth P. Chamberlain, Gates Engineering Co.; W. J. Clayton, Minnesota Mining and Manufacturing Co.; C. W. Cassell, Bryant Paper Co.; H. C. Bradford, Henry Nendorf and A. W. Cole, Rex Paper Co.; D. D. Cameron, W. F. Hamilton, R. T. Trelfa, H. O. Ware and F. L. Chappell, Hercules Powder Co.; O. F. Fischer and M. S. Fogerty, Bryant Paper Co.; D. A. Fisk and Don Militzer, Garrett Burgess, Inc.; M. F. Floton and H. B. Johnston, Allied Paper Mills; E. C. Jacobi, Sandy Hill Iron and Brass Co.; Frank Libby, G. H. Rice and L. H. LaLiberti, Kalamazoo Vegetable Parchment Co.; L. J. Lynd and E. A. Porrier, Porrier Control Co.; H. C. Pearson, Pioneer Paper Co.; F. A. Root, Clinton Industries; Douglas Robbins and Arthur Griffith, Douglas Robbins Co.; R. H. Siple, Corn Products Co.; F. W. Sanders, National Starch Products; Paul Schrieber, General Dyestuff Corp.; Glen Sutton and Arnold Weller, Sutherland Paper Co.; Peter Talbot, Williams, Gray Co.; R. M. Upright, Dow Chain Co.; W. J. Wolfe, Cleni Sisson and M. A. Hart, Mac Sim Bar Paper Co.; and L. G. Durant, Paper and Industrial Appliance, Inc.

(continued from preceding page)

min Flohr, Flohr & Co., Seattle; A. P. Fredrickson, Agner & Fredrickson Co., Seattle; R. A. Fulton, Wilson & Geo. Myer & Co., Seattle; N. Galteland, Tacoma; J. E. Garrison, American Cyanamid Co., Seattle; A. N. Hartnagel, Fibreboard Products, Inc., Port Angeles, Wash.; E. F. Heacox, Weyerhaeuser Timber Co., Longview; R. M. Hendry, Tacoma Plumbing Supply Co., Tacoma; Dr. A. Hicks, Western Washington College of Education; Blaine L. Kerns, and H. A. Rose, Westinghouse Electric Corp., Seattle; Fairman B. Lee, Seattle; M. R. Lory, Westinghouse Electric Corp. East Pittsburgh, Pa.

Frank W. McKenzie, H. N. Simpson, Pulp Bleaching Co., Seattle; C. D. Ries, General Electric Corp., Seattle; Otto H. Sangder, Rayonier Inc., Hoquiam, Wash.; Roy Shaneman, Brian Shera, and Richard A. Snyder, Pennsylvania Salt Mfg. Co. of Wash., Tacoma; E. E. Stephens, Bumstead-Woolford Co., Seattle; R. M. True, General Dyestuff Corp., Portland; Russell O. Vognild, Jonathan B. Ward, Hooker Electrochemical Co., Tacoma; Albert Wilson, Pulp & Paper Industry, Seattle; Hubert O. Wilson, U. S. Forestry Service, Bellingham; and Col. W. B. Greeley, Seattle.

Importance of Forest Management To Our West Coast Forest Industries

By Axel J. F. Brandstom
Consulting Forester

(Excerpts from his first paper given at Bellingham TAPPI meeting April 2. The other follows).

Today we are living in a new age as far as interest in forest management in this region is concerned. The forest industries have become forestry conscious. They are interested in re-logging or closer utilization. They are interested in selective cutting or stand management; in better fire protection; in holding on to their cut-over lands or young second growth instead of letting them go for taxes; and, in the case of some of the larger and more stable concerns, even in planting; and they are actually doing them and expect to do more and more as fast as manpower and other facilities permit.

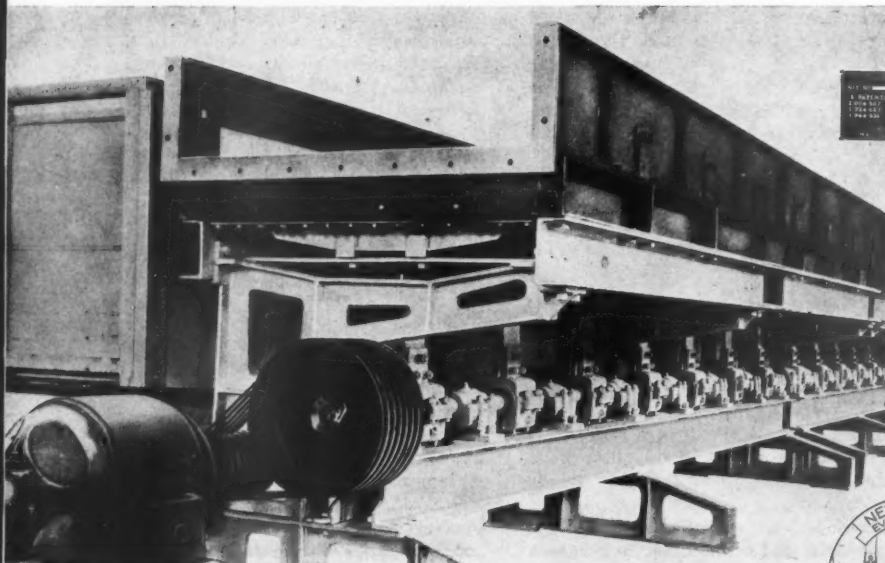
Back of this interest in forest man-

agement, of course, is the improved economic outlook. . . . The law of supply and demand has been at work to bring forest management into the picture. The depletion of our regional old growth timber inventory to its present level and the post-war outlook for a strong demand on this dwindling—and now, as a rule, strongly held resource, has turned the trick. No longer do we hear depressing talks about a tremendous overburden of old-growth timber overhanging the market. It is in the face of this that improved forest management and utilization practices begin to make economic sense.

How much raw material might be gained in the region as a whole through improved management and utilization practices is a question recently explored by Burt B. Kirkland

(continued on page 54)

Interesting Application of Smythe Flat Screens At St. Helens Pulp and Paper Company



THE ST. HELENS PULP & PAPER CO., St. Helens, Ore., installation is identical with the one shown, although this picture was not taken in that mill because setting of the base and mechanism is so crowded as to render such impossible.

Screens serve numerous useful purposes in pulp operations. An interesting application exists at St. Helens Pulp & Paper Co., St. Helens, Ore., where bleached sulfate pulp passes over Smythe flat screens and unbleached sulfate pulp goes over a three-screen centrifugal system.

Six of the nine Smythe eccentric drive flat screens in this mill were placed in 1941. Three more were added in 1945, to give a present operation arrangement of three rows of three each.

These screens operate so smoothly and quietly that replacement parts have been unnecessary to date, excepting three rubber diaphragms, life of which is well known to be limited. The screens, according to Roy Brown, the pulp mill superintendent, are easy to install, simple to operate, and have a high screening capacity with a low dirt count. They constitute a great improvement over the mill's former screens, according to his statement.

Two important factors of operation mentioned are self-oiling bearings and large outlet capacity. The patented Jones type split bearings with self-oiling feature have been found economical in the matter of lubricant. The St. Helens mill executives said "we oil but once a week."

Bronze outlets from the all-bronze vats, designed to give the ultimate in capacity, have special provisions for cleaning without removing screen plates. This does not exclude easy access for inspection because any two plates may be taken up merely by removing four plate

fasteners. These provisions constitute added facility.

Pulp Mill Superintendent Brown likes their performance sufficiently to admit, "I don't see how they can be improved upon."

Carpenter Elected NPTA President

National Paper Trade Association held its 43rd annual convention at New York's Waldorf-Astoria Hotel the first week in April and elected G. E. Carpenter, vice president of Carpenter Paper Co., Omaha, Nebraska, to head the organization this year. He succeeds R. M. Harris, president of Allis & Corey, Rochester, New York.

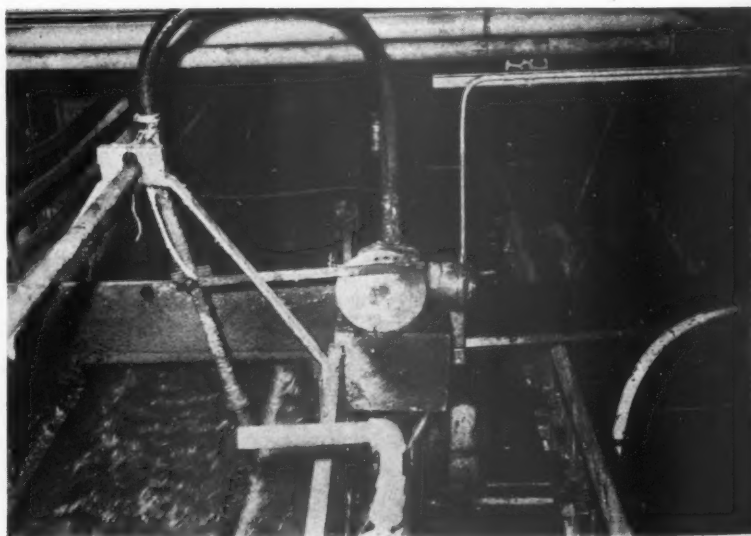
Mr. Carpenter is an optimistic chief for NPTA, believing that the industry will meet its demands by the end of the year. He pointed to wrapping mills now running at 104% of capacity, at the sectional release of surplus toilet paper (25,000,000 rolls) by the government, and at the possibility of increasing wood pulp from Norway, Sweden and Finland.

Others elected by NPTA were: A. W. Towne, of Blake, Moffitt & Towne, San Francisco, vice president in charge of fine paper division; Ralph Luff, D. L. Ward Co., Philadelphia, vice president in charge of wrapping paper division; and J. O. Bulkley, Bulkley, Dunton & Company, Inc., New York, re-elected treasurer.

Ben Natwick Flies To Appleton for Week

Ben Natwick, western representative of Appleton Wire Works, made a round trip flight to Chicago in early March, spending a week at the wire manufacturing plant in Appleton, Wis.

THE WHOLE WASH FLOW OF BLEACHED SULFATE PULP goes over these Smythe flat screens, with clean pulp wash flowing into the small trough on the left. The oscillating shower shown here runs crosswise of the screens. (Picture by PULP & PAPER INDUSTRY).





CORRECT VAT DESIGN INSURES CLEAN PULP

MULTIVAT ECCENTRIC DRIVE FLAT SCREEN
PATENTED

- A study of the above diagram will reveal the superiorities of the SMYTHE MULTIVAT FLAT SCREEN vat design.
- THE SMYTHE SCREEN has a proven, effective eccentric driving motion, positively actuating the diaphragms—LOW MAINTENANCE due to adequate line shaft bearings and oversize eccentrics.
- Progressive mills in the Pacific Northwest are setting new production records with this screen.
- ANALYZE — INVESTIGATE — INQUIRE of those using the SMYTHE MULTIVAT FLAT SCREEN.
- BUILT ON THE PACIFIC COAST For U. S. Mills. CANADIAN OPERATORS refer inquiries to our CANADIAN REPRESENTATIVE and BUILDER: HYDRO-TURBINE CO., LTD., 921 Sun Life Bldg., Montreal, Quebec.

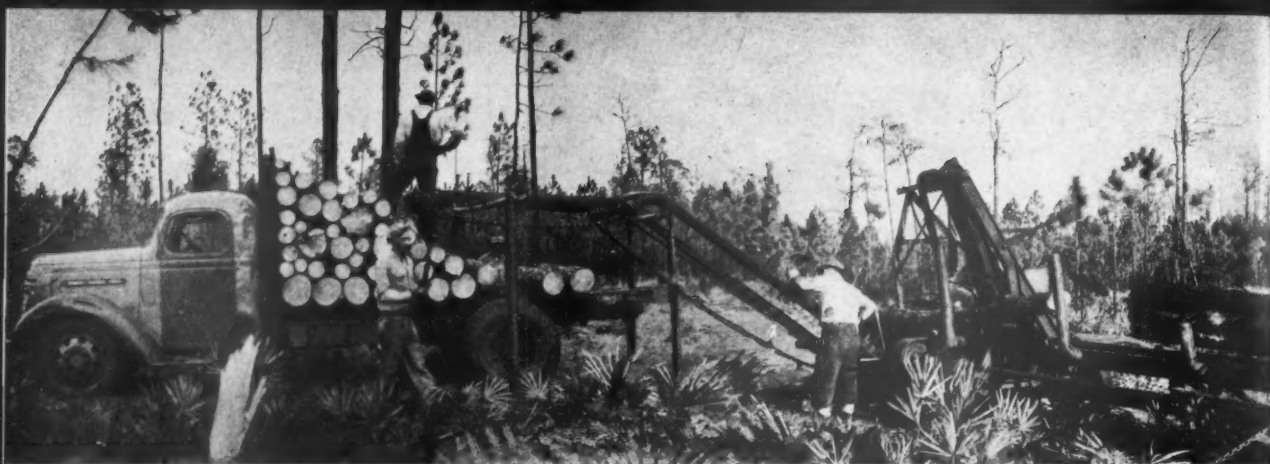
RAY SMYTHE

501 Park Bldg. Portland 5, Ore.

Beacon 0502

Representing —

ATWOOD & MORRILL CO., Salem, Mass.	VALES
CARBONDUNDUM CO., Niagara Falls, N. Y.	SPECIAL WHEELS
MAGNUS METAL CORP., Fitchburg, Mass.	"HARDY" PRODUCTS
HEPPENSTALL CO., Pittsburgh, Pa.	FORGINGS, SHEAR KNIVES, DIE BLOCKS
NORTMAN DUFFKE CO., Milwaukee, Wis.	PERFORATED METAL
RICE BARTON CORP., Worcester, Mass.	PAPER MACHINERY
SHENANGO-PENN MOLD CO., Dover, Ohio	CENTRIFUGAL BRASS and ALLOY CASTINGS
LANGDON PATENTED	COLLAPSIBLE WINDER SHEETS
PAXTON-MITCHELL CO.	ROD PACKING
KOPPERS COMPANY	PISTON RINGS



Logs are rolled up on chain conveyor (right) which moves them to saw, then along another conveyor for easy loading on truck. Machine cuts 12½ truckloads per day.

New Type of Portable Pulpwood Mill Used by Rayonier and Others in South

Use of a "pulpwood sawmill" to cut tree length logs into billets in the woods is being effected by Rayonier Incorporated on its forest lands near Fernandina, Fla., as a means of achieving a reduction in "touch" labor and a step toward an all-weather operation. Rayonier, because of its high Alpha sulfite pulp product, wants its pulpwood "fresh."

This type of mechanical aid is gaining widespread attention in southern pulpwood operations and, while in process of development through practical operational test, promises in improved form to come into general use. Originated by James H. Allen on the Florida Pulp & Paper Co. forest lands near Pensacola, Fla., its modified form is used by both Rayonier and by International Paper Co.'s Southern Kraft Division near Homerville, Ga. It is being closely observed by the Southern Pulpwood Conservation Association.

In the Rayonier woods a Caterpillar D-4 tractor brings in the tree length logs five or six at a time. The maximum distance these are pulled ranges from 1200 to 1500 feet, with the latter figure as absolute. These are dropped close-by the mill, and a Ford-Ferguson tractor pulls them one by one into position for the mill operation.

A chain anchored to a convenient tree stump functions through a drum to pull the logs onto a chain conveyor, which is 22 feet long. When the log is longer, which is most frequently the case, the end is stopped in position by coming up against stakes driven into the ground. A feature added to the pulpwood mill by Rayonier is a dead roller placed to take the weight of the



H. D. COOK (left), Assistant Manager, Woodlands Division, Rayonier Incorporated, Fernandina, Fla., and W. H. FLOOD, Pulpwood Sawmill Foreman. Sawmill in background.

end of the log as it moves up onto the conveyor toward the cut-off saw.

Description of Mill

The pulpwood mill consists of four sections. The first is the chain conveyor (with the separate dead roller for the tail end of the log); the second, the frame mounting the cut-off saw; the third, a Ford-Ferguson tractor unit to furnish power; and the fourth, the framework carrying the conveyor chain for loading the pulpwood auto trucks. Each section is wheeled so it can be conveniently pulled from one woods location to another by the Ferguson-Ford tractor. Another unit is a tool house on wheels. The pulp mill, outside of the tractors, was built in the Rayonier shops.

The winch drum used to pull the logs onto the conveyor is operated through a transmission rod and gears. The cut-off saw that bucks the log into pulpwood lengths is powered through two pulleys, one to the tops of the frame; the other from the frame top to the saw. A chain gear with four-inch lugs catches the pulpwood lengths from the saw, conveys them across the frame, and drops them onto the waiting truck.

The results of the operation have been satisfactory to James T. Sheehy, resident manager; A. G. McArthur, Fernandina division woods department manager, and H. O. Cook, assistant woods manager, who maintains constant supervision over its workings.

The company is using the facility in low rough lands that had been worked over by pulpwood crews and certain small areas passed over because they presented more difficulty than generally encountered in a regular pulpwood cutting operation. Because some of the ground is on the wet side, the trees have a tendency to run into swelled butts and many of them are over the pulpwood size but there are not enough of these to warrant their being logged for saw timber.


In felling these trees the Lowther pulpwood saw, mounted on wheels, is used by Rayonier to advantage. This saw, of a type featured in a Saturday Evening Post article, requires a pike man, a saw man and an ax man. Many of the stumps are four inches from the ground while others are as low as two inches. One saw fells enough trees to make as high as 40 units per day, with an

ve
d
d
ts
is
ne
er
A
gs
m
ne
ne

ity
en
nd
pe-
lty
a
on.
on
en-
and
ood
of
ged

her
els,
age.
n a
re-
and
are
hile
hes.
ake
n an

946



THE PULP AND PAPER INDUSTRY everywhere is striving to use more of nature's raw material. Many of its pulpwood procurement and production departments are using their ingenuity to provide or encourage wider use of mechanical devices for recovering more wood at lower cost. Here is a new pulpwood sawmill developed in the South and described in the article on these pages.

average of 30 units of pulpwood. A crew comes behind to top and limb the tree.

The company also uses chain saws in their woods operation with satisfactory results.

Operation Costs

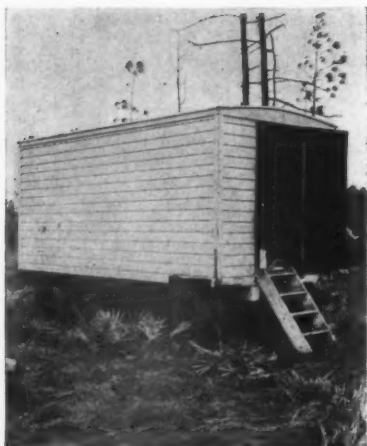
The pulpwood mill operation itself is operated with a crew of six men plus a foreman and a sawyer. The truck driver is on top of the truck loading; two men on the ground help get the pulpwood lengths properly placed on the vehicle; one man assists in the feeding

of the cut lengths onto the loading rack chain; there is a sawyer; two men feed logs to the conveyor; and, one man operates the conveyor mechanism winch drum.

The mill keeps six trucks with four truck drivers on the run between the location in the woods and the Rayonier mill in Fernandina, 25 miles distant. The operation furnishes pulpwood to the Rayonier mill at about \$15.00 per unit which is about two dollars higher than the average normal pulpwood operation. However, the normal operation is to railroad or to boat land-

ing, with less truck haul. It is believed that under equal conditions the use of the pulpwood mill will show an equal cost, with lessening of pressure in regard to labor, as it is providing an additional service in bringing in difficult to get trees, an essential function in orderly selective forestry practice.

As in the case of other pulp and paper mills in the Southeastern long-leaf and slash pine tree areas, Rayonier is not enthusiastic about "cat faces" or that section of the trees used for drawing off naval stores. However, these must have



Movable tool and supply shed for the pulpwood sawmill being used in Southern pulp and paper industry.

some disposition. Part of the cat-faces brought in are sold to Hercules Powder Co.; others are put through a "hog" and used for boiler fuel.

The pulpwood mill cuts about 12 truck loads per day, with each truck taking 2½ pulpwood units per load.

Rayonier is practicing the most advanced forestry on its lands.

The William Kennedy & Sons, Ltd., Build Morden Stock-Makers

The William Kennedy & Sons, Ltd., Owen Sound, Ontario, has been appointed licensee in Canada by Morden Machines Company of Portland, Oregon, and already the Canadian concern has begun the production of Morden Stock-Makers. They report a wide interest among Canadian mills in this modern pulp refining unit.

The Kennedy firm is the largest manufacturer of propellers in Canada, with 85 years of experience in the production of propellers of all types. Over ten years ago the company's engineers began studies of blending and agitating the contents of paper mill stock chests by means of propeller type agitators and the company has made many installations of their propellers for this use. During the war their ship propellers were used for practically all the shipping built in Canada and for part that built by Britain.

In the United States, Morden Stock-Makers are now installed in a number of mills across the country from coast to coast. In the State of Wisconsin alone mills have pur-

chased over fifty of these units. Now, in Canada, Kennedy are in position to effectively serve the mills in that country and will draw on the experience of Morden Machines Company in doing this.

Daughter Joins Salmonson Family

Sam Salmonson, veteran sulfite mill superintendent in both eastern and far western mills during the past 40 years, is a grandfather for the tenth time.

It happened in the wee hours of April 5 when a daughter joined the family of Mr. and Mrs. Walter Salmonson, of Seattle. It was their fourth and the score for them is now three girls and one boy.

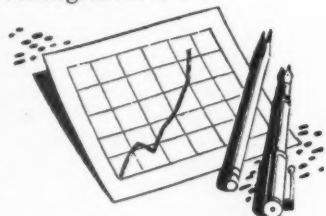
The Salmonson grandparents live at Route 5, Box 1683, Everett, Wash., Sam having retired from his position at Soundview Pulp Co. last month. Walter is western representative of Simonds, Worden, White Co.

Hartwig Talks at Berkeley

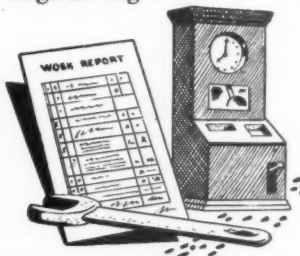
One of the speakers at the California Personnel Management Association meeting April 16 at the Claremont Hotel, Berkeley, Calif., was Otto Hartwig, general safety director, Crown Zellerbach Corp., Portland, Ore. His talk was on "What is management doing to inform employes what is behind the industry payroll dollar."

PULP AND PAPER INDUSTRY

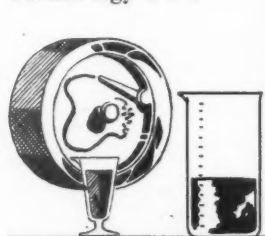
Management . . .



Engineering . . .



Technology . . .



FACTS WARMLY TOLD

To merely set down the "important facts" as they are gathered by PULP & PAPER INDUSTRY field men is not enough. Clarity, interest and a quick assimilation of these facts by the reader demands comprehensive charts, diagrams and first hand photographs.

----- ENTER MY SUBSCRIPTION AS INDICATED BELOW -----

The annual NORTH AMERICAN REVIEW NUMBER, price \$1.00 is included in the regular subscription rate below.

- ☐ 1 Year—U. S. and Canada, \$2.00; Foreign, \$3.00. ☐ 3 Years—U. S. and Canada, \$5.00; Foreign, \$8.00.
☐ Combination Special: \$3.00 includes, 1 year's subscription plus North American Review Number and a copy of the DIRECTORY of Pacific Coast Pulp & Paper Industry. (Foreign \$4.00).

NAME..... ADDRESS.....

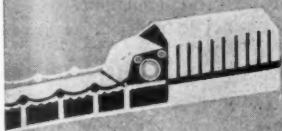
CITY..... STATE.....

IMPORTANT: Please fill in below your particular business or connection with the industry:

COMPANY..... POSITION.....

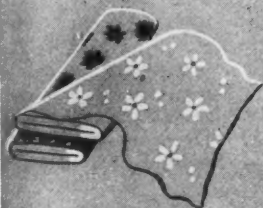
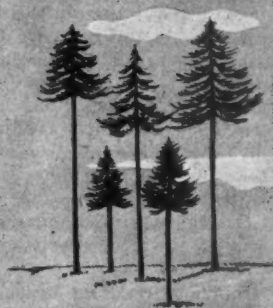
two decades of pioneering

A Continuous Record of Product Development



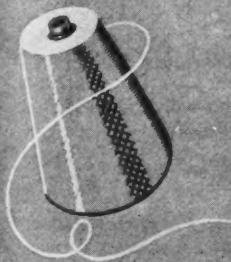
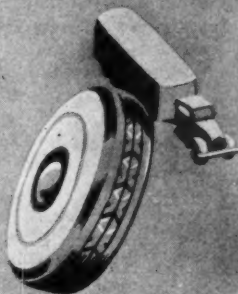
Since 1926, when it pioneered bleached sulphite paper pulp from Western Hemlock, Rayonier has been making scientific history in the interest of its customers.

Through research, the company perfected a rayon pulp from a brand new source of supply — Southern Pine. This opened up a new agricultural and industrial economy in the South.



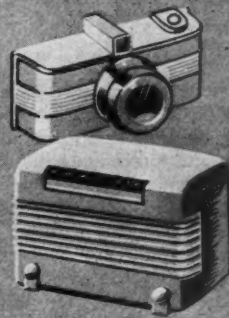
In 1930, the company introduced the first pulp from Western Hemlock for the viscose rayon industry. A dissolving pulp for use in making cellophane followed.

Another Rayonier pulp enabled the manufacture of high tenacity yarns for tire cord, contributing to one of the most outstanding advances made by the rayon industry.



Upsetting precedent, the next product was a pulp for the acetate rayon industry. A cellulose for nitrating purposes also was developed.

Special pulps have been developed also for making photographic papers, certain plastics and other cellulose-base products.



Pioneering requires initiative, vision, confidence and courage — a continuing search for new products and new uses. This is an underlying feature of Rayonier's customer program.

RAYONIER

INCORPORATED

Sales and Executive Offices: 122 East 42nd Street, New York 17, N.Y.
Mills: Hoquiam, Port Angeles and Shelton, Wash., and Fernandina, Fla.

A STUDY OF COTTRELL PRECIPITATOR OPERATIONS

By Russell Graff

Longview Fibre Co., Longview, Wash.

Every kraft mill has an appreciable loss of chemical in the form of dust and fume in the flue gas coming from the recovery furnaces. It is a common practice to minimize this chemical loss by some mechanical means. Some mills use scrubbers or disc evaporators, while other mills use electrical precipitators. In the Longview Fibre mill we pass the flue gases through Cottrell electrical precipitators to recover as much of the dust as possible.

Every major piece of equipment, such as a precipitator, creates numerous problems both in operation and maintenance. The question also arises as to how efficient the equipment is and what can be done to improve its operation. I am going to discuss the precipitator installations and operation at the Longview Fibre mill and explain briefly some of the methods we use in dealing with the problems that arise.

We have two separate precipitator installations of the rod-curtain type, made by Western Precipitation Co. No. 1 Precipitator was put into operation in 1936, and No. 2 Precipitator in 1942, but they each have the same rated capacity and general design. The only important difference is in the method of rapping. Each precipitator contains three units in series, a unit being made up of two sections approximately 12 feet high and 8 feet wide. This gives two channels for gas flow in each precipitator 96 square feet in cross-section and 25 feet long. The precipitators are filled with alternate rows of grounded rods and discharge electrodes hanging vertically to give a curtain effect.

Alternating current at approximately 450 volts is stepped up to about 50,000 volts by the precipitator transformers. This in turn is converted to direct current by disc rectifiers which are connected to the discharge electrodes situated in the path of the dust-laden gases. The electrical charge in the gases and the high potential difference between the discharge and grounded electrodes cause the dust particles to collect on the electrodes, mostly on the ground rods which are $\frac{1}{8}$ " standard pipe. This dust is knocked off into the hoppers below, where it is conveyed to a mixing tank and

A SHIBLEY AWARD CONTEST PAPER

This paper, presented before the Pacific Coast section of TAPPI, Seattle, Dec. 4, is entered in the Shibley Award Contest for 1945-46, open to employees in operations departments of western mills. Younger employees are particularly encouraged to compete. The author is 26 years old, a graduate of Oregon State College.

thus put back into the liquor system.

For the burning of our black liquor we have three Tomlinson furnaces under continuous operation and two Wagner furnaces for use when needed. Since the Wagners are idle most of the time, I will emphasize the conditions existing when only the three Tomlinsons are operating. The maximum rated capacity of these three furnaces is 370 pulp tons. The gas flow from the furnaces averages 170,000 C.F.M. and at a temperature of approximately 420° F after passing through the breechings and precipitators. The dust load is slightly greater than 0.2 pounds per thousand cubic feet of gas, or nearly 55,000 pounds per day. The analysis of this dust will change considerably with the existing furnace conditions, but a close estimate would be 70% Na_2SO_4 and 30% Na_2CO_3 , the other Na compounds, sulphur and carbon making up a very small percentage of the total.

A breeching system connects each furnace with the precipitators, and the precipitators to the main stack. The stack creates a draft of approximately 1.6 inches of water, enough to allow the throttling at the precipitators which is necessary to insure equal distribution.

Unless a mill has been thoroughly planned, any expansion or addition of new equipment creates a location problem. The equipment is often installed in a position where it can not operate at its greatest efficiency. Positioning is an important factor in the operation of precipitators since the efficiency depends largely upon the gases and dust load being evenly distributed through all of the operating sections. This is a difficult task

when there are several precipitators and when the gas supply is from several furnaces whose operation may not always be uniform. It is nearly impossible to have a system where dust settling, gas momentum and draft losses do not create numerous problems.

Our present precipitator and breeching systems were not laid out in one operation, but additions were made to keep up with the growth of the mill. We have thus encountered all of the above-mentioned problems, as well as many others.

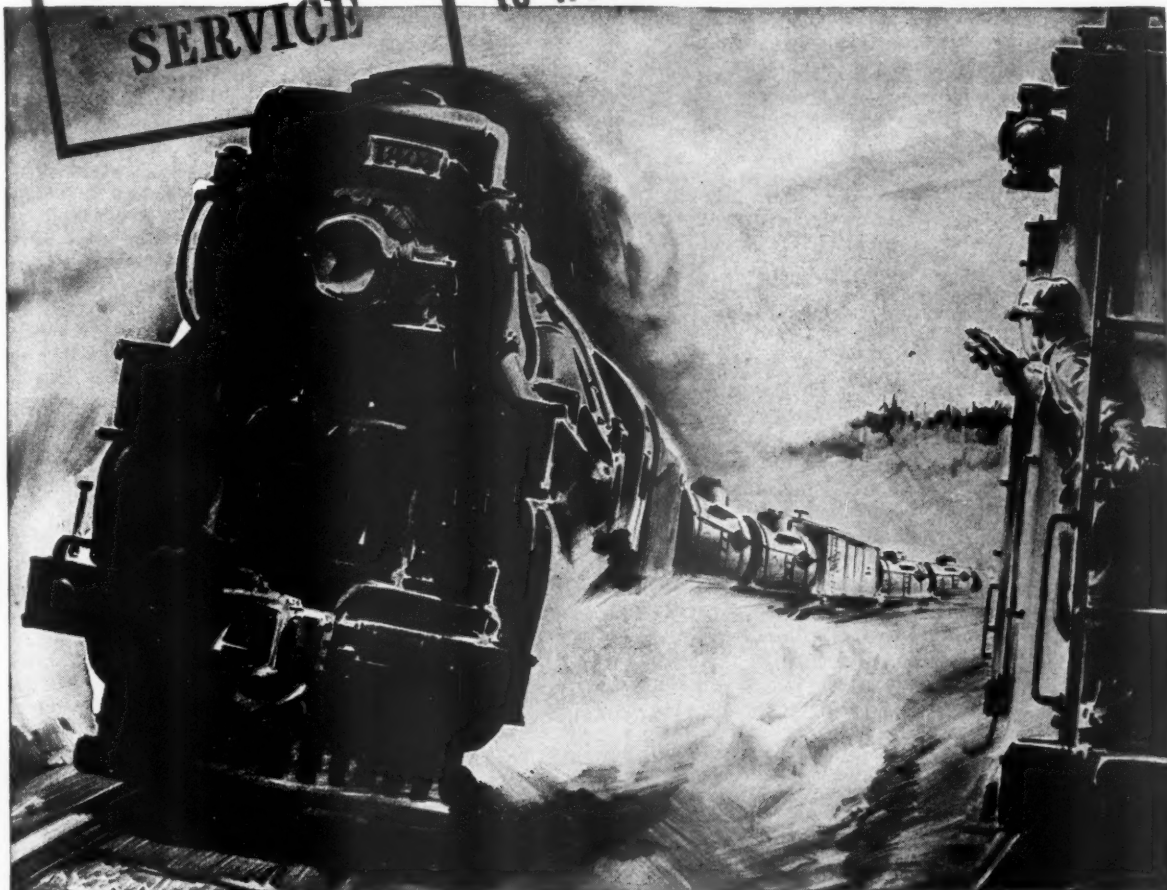
To distribute the furnace gases to each of the precipitator sections we use sliding dampers located in both the inlet and outlet breechings. The gas distribution is set by combining Pitot tube readings with visual tests and noting the draft readings for each section. Actual distribution during operation is controlled by these draft readings. A visual test is used quite extensively in some precipitator installations where there are several sections in parallel. Lights are positioned in the breechings at right angles to the flow of gas, and the flow is then regulated so that the intensity of the light is equal through each channel. This method does not find much use in a kraft mill, however, since there are seldom more than two sections in parallel. The visual test we use compares the cloudiness of the outlet gases from two sections at a point where they converge in the outlet breeching.

Rapping

One of the important factors in the successful operation of a precipitator is the rapping of the ground rods and discharge electrodes. The highest collection efficiency is obtained when the precipitator is operated at the maximum potential that can be reached without arcing. If the dust is allowed to collect on the rods, the distance between the electrodes is shortened and the potential is reduced. This makes frequent rapping necessary, especially when the dust load is heavy. However, in an installation such as ours where it is not possible to shut off the gas flow during rapping, there is a considerable carry-over loss each time the rods are rapped. We try to arrive at a balanced point

**OVERNIGHT
SERVICE**

to western paper mills



BEAR BRAND CHEMICALS

Ready to ship!

AMMONIA
CAUSTIC SODA
CHLORINE
SULPHUR DIOXIDE
ZINC HYDROSULPHITE

GREAT WESTERN DIVISION

THE DOW CHEMICAL COMPANY
SAN FRANCISCO CALIFORNIA
Seattle Los Angeles

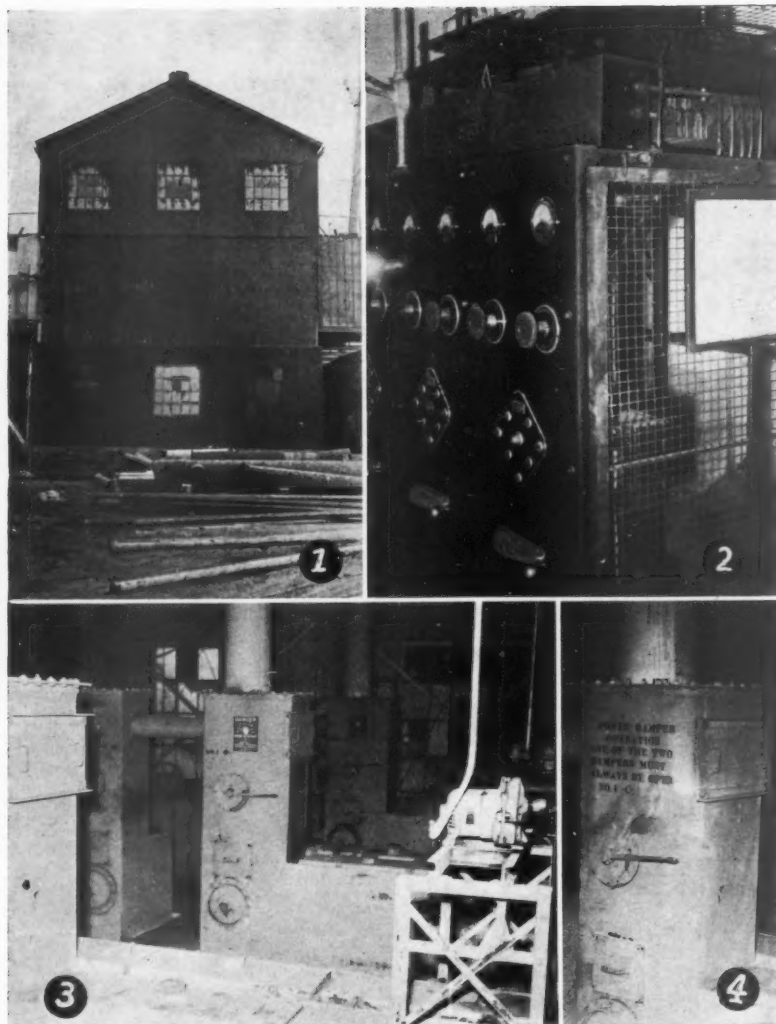
Dow's Great Western line of industrial chemicals enjoys a well-earned preference among Pacific Coast paper producers because of ready availability and constant uniformity. The facilities of Great Western are devoted primarily to the manufacture of chemicals for Western industry.



DOW

CHEMICALS

INDISPENSABLE TO INDUSTRY



VIEWS OF COTTRELL PRECIPITATORS at Longview Fibre Co., (Longview, Wash.) Operations are discussed in this article.

1. Outside view of building housing No. 2 Unit, where Mr. Graff's findings were made.
2. The panel control board for Precipitator Unit No. 1. Striking mechanism for this unit operates manually.
3. Upper compartment in both buildings are devoted to striking mechanism which knock off the dust accumulated on electrodes. Manually operated striking motors for each set of rods on one side are shown to the right, three of them similarly arranged on either side of the room.
4. A close-up view of part of mechanism in Photo No. 3.

where there will be just enough rapping to keep the rods clean. Quite frequently, however, extra rapping is necessary in one or more units to prevent shorting.

Both of the precipitators have automatic discharge electrode rappers on each unit, the rapping being accomplished by striking the supporting beam with a metal wheel. In No. 1 Precipitator the rappers are on a 10 minute cycle, each rapper operating for approximately 15 seconds. In No. 2 Precipitator the cycle is 15 minutes, with the same 15 second operating time.

The two precipitators are designed for different methods of ground rod

rapping, No. 1 being manual and No. 2 being an automatic operation. The manual operation is accomplished by striking the rapping anvil on each row of rods with an air hammer. This rapping is done in a 45 minute cycle, one unit being rapped every 15 minutes. The automatic rappers in the No. 2 Precipitator are a tapet type rapper operated by a slowly revolving cam shaft. Since each section in each of the three units has a separately driven cam shaft, there are numerous possibilities for a rapping cycle. At present each unit is rapped for a 5 minute period, each rapping anvil being hit approximately seven times. The length of the complete cycle is 15 minutes.

Both systems have advantages and disadvantages. The hand operated air hammers give the best ground rod rapping, but the carry-over loss is greater due to the large volume of dust being loosened at one time, and the rapping is not always carried out at the proper time. The automatic ground rod rappers make the operation simple and accurate, and allow much of the carry-over to be collected by the following unit, but the rapper springs break quite frequently and the rapping is not as violent as would be desired. This makes a shorter rapping cycle necessary. The automatic discharge electrode rappers create the same difficulty. The dust builds up on the electrodes that are not rapped hard enough until they sometimes reach a diameter of 3 or 4 inches. The precipitators are cleaned regularly on a 4-week schedule, but it is frequently necessary to do extra rapping or even enter the percipitators and remove the built up dust by hand.

Efficiency

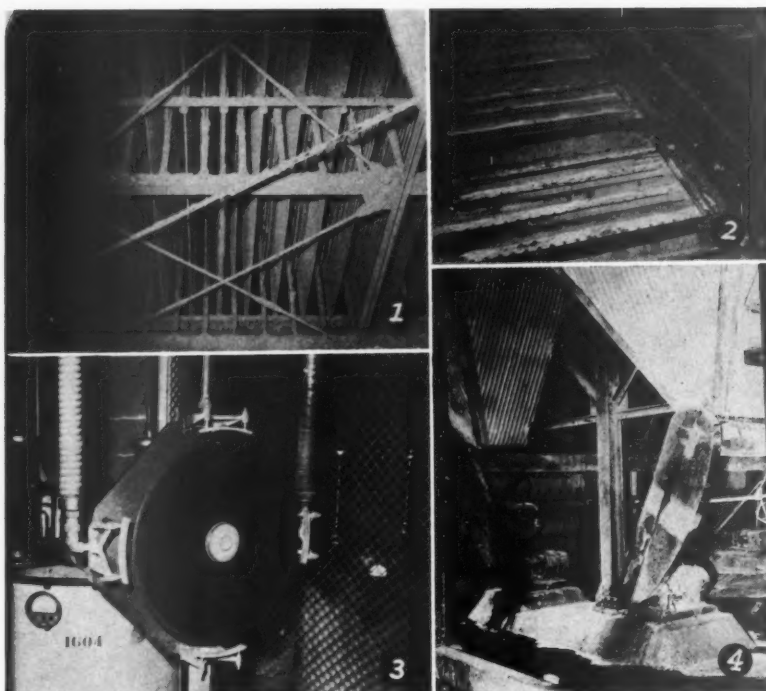
One of our big problems has been in determining just what is happening in the precipitators; how efficiently they are operating. We have used two methods of determining efficiencies, the difference between the two being in the method of catching the dust in the outlet gases.

In the first method the dust from a measured volume of gas is dissolved in water, and the resulting solution is analyzed for its chemical constituents. This analysis is compared to the chemical analysis and weight of the dust collected by the precipitator.

The second method is much simpler and gives fewer opportunities for error. It consists of catching in a glass cloth bag all of the dust from a measured volume of gas, and comparing the weight of dust collected in the bag with the weight of dust collected by the precipitator.

Most of the equipment used in this second method was made by Western Precipitation Co.

There is a sampling tube with various sized nozzles and a cast aluminum container for the glass-cloth bag. The dust-free gases passing through the bag are cooled to condense the water vapor, and then measured with a gas meter. The rate of flow through the system is regulated with an air ejector. The glass-cloth bag and container are inserted directly into the breeching to eliminate the insulation that would be required to prevent condensation.



MORE VIEWS OF COTTRELL PRECIPITATOR OPERATIONS at Longview Fibre Co., as described in this article.

1. This view, taken diagonally from a manhole outlet, gives cross-section of Cottrell Precipitator electrodes, hung vertically, both discharge electrodes and ground rods. Although electrodes have been rapped clean, accumulated dust is visible on the rod supports.
2. Automatic ground rod rapper mechanism of No. 2 Unit, and hangers for ground rods with their cover plates removed, look like this.
3. Disc rectifier in operation on No. 1 Unit. This handles about 50,000 volts.
4. Dust dislodged from rapping of plates comes down to two-unit auger conveyor system hung above ground floor but electric-motor powered from the floor, for removal from Cottrell Precipitator.

When using a new bag, a small amount of the dust filters through and is dissolved in the condensate, making an analysis necessary. After two or three tests, however, the loss from the bag is negligible and the weight alone is all that is necessary.

One of the improvements used in this later test was a modified Pitot tube, made by Western Precipitation Co., for measuring the flow of gases in the breeching. The standard Pitot tube has very small openings which clog almost immediately when inserted in the dust laden

gases. This modified tube consists of two pieces of seamless steel tubing welded together and bent slightly apart at the end. The bent ends are cut to allow the hole in one tube to face upstream and the hole in the other tube to face downstream. The holes are nearly $\frac{1}{4}$ " in diameter. A slight rapping at the time a reading is taken will dislodge any dust that has collected in the holes, thus making it possible for the tube to remain in the gas stream for an indefinite period.

The weight of dust collected by

the precipitators is determined by transferring all of the collected dust into two large weighing tanks. The tanks are connected to scales so that the collection rate can be determined for any length of time.

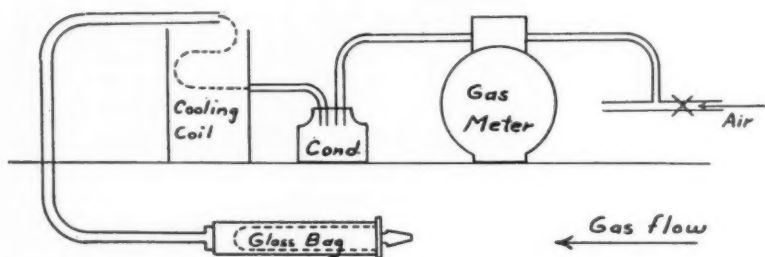
During the last few years we have made several changes in our breeching system that have had a noticeable effect on the collection efficiency of the precipitators. We have also made some experiments that show how greater efficiencies can be obtained. Before the changes were made the breeching system would not permit even gas distribution to each of the two precipitators and still allow good operating conditions at the furnaces. The average gas distribution at that time was 60% to No. 1 Precipitator and 40% to No. 2, with the majority of the 40% flowing through one section of of the No. 2 Precipitator. The inlets were at right angles to the gas flow in the breeching, and the momentum of the gas carried it past the first inlet. With these conditions existing the efficiencies were 75% for No. 2 Precipitator and 72% for No. 1.

The efficiency of No. 2 could be raised to 82% by closing the dampers and shutting off the power during rapping. The figure was about 80% if the power was left on. Since the precipitators are not constructed to run in this manner, there were several difficulties encountered. By shutting the dampers on one section the gases were forced into the other three already crowded sections, thus decreasing their efficiency. Also the dust had more of an opportunity to build up on the supporting beams, and shorting was soon noticed. However, with adequate precipitator capacity and proper rapping this system of closing dampers during rapping would be very advantageous.

By inserting a dividing damper into the inlet of No. 2 Precipitator, it was possible to equalize the flow between the two sections and raise the efficiency to 83.5%. This damper added more resistance to the flow of gas to No. 2, however, so the increase of efficiency was partly due to less gas flow. The greatest improvement was made when the breechings were arranged to allow a 50% distribution to each precipitator. The efficiencies were then 87% for No. 1 and 85% for No. 2. There are still several minor changes to be made that will make an even distribution possible to all four sections under any operating condition. This will help us to maintain the efficiencies that we know are possible.

The precipitators are each de-

TESTING METHOD



THE MEAD SALES COMPANY

230 PARK AVENUE, NEW YORK 17, N. Y.
111 W. WASHINGTON STREET, CHICAGO 2, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP

BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP



A giant fir was tinder in the arms of Paul Bunyan, as he and Babe headed back to camp after a day's logging.

A reproduction of this incident from the fabulous life of Paul Bunyan—the fifth of a series—will be sent on request. It will contain no advertising.

signed to handle 75,000 C.F.M. at temperatures of 450 to 500° F. The collection efficiency at this flow is expected to be 80 to 90%. Since our gas flows are normally greater than this, we can not expect much more improvement without additional equipment. We could probably show small increases in efficiency by increasing the moisture content of the gases or reducing the temperature, but this would undoubtedly lead to new problems.

Bent Electrodes

Considering the problems encountered in the mechanical operation of the precipitators, the most serious was bent electrodes. These discharge electrodes are 1/8" twisted steel rods 12 feet long. They are hung in a vertical position by a nut welded on the top end and are held in place by passing through small holes in three horizontal supporting pipes. These electrodes are rapped

mechanically, as was previously mentioned, by hammers which strike the underside of the supporting beams for the horizontal pipes. This type of rapping gives a bouncing action to the electrodes, thus freeing them of their dust. Difficulty was encountered when the holes in the supporting pipes became clogged with dust. The electrodes have a tendency to work themselves upward during rapping and the combination of this motion and the binding in the supporting pipes caused the electrodes to bend and short across.

Several tests were run to determine if this electrode bending could be prevented. Sash weights were hung on the bottoms of the electrodes in several rows, and in other rows the holes in the supporting pipes were drilled to larger sizes. After running this way for several months it was decided that drilling the holes in the supporting pipes to

1/2" in diameter was the most practical as well as the most helpful method of preventing electrode bending.

All of these tests and experiments I have mentioned helped us to understand what was happening in our precipitator units as well as increasing the collection efficiency. There are still many problems to be worked out, such as proper distribution when one or more of the furnaces are down or when one of the precipitators is being cleaned, but there is a limit to the efficiency which we should try for. With increased efficiencies the demand for make-up salt cake is decreased and as a result the sulfidity of the final cooking liquor is lowered. The balance point for all of the many variables that affect precipitator operation is usually determined, in the end, by the economic factors involved, and this must be worked out by each individual mill.

RECOVERY OF SULFITE WASTE LIQUOR FROM BLOWPITS

By William F. Abbott

Chemist, Puget Sound Pulp & Timber Co.

In any process utilizing sulfite waste liquor, efficient recovery of the liquor in a concentrated state is a consideration of primary importance. Various methods for the separation of liquor from the pulp may be employed, depending on the utilization process and type of equipment to be installed.

The use of countercurrent vacuum washers is generally agreed to be the most efficient method of recovery. However, at the time the Puget Sound Pulp and Timber Co. undertook construction of an alcohol plant, it was impossible to make the major changes necessary for the installation of this type of equipment. Accordingly, a recovery procedure was developed which employed the existing blowpit equipment with the least amount of alteration, and it is the purpose of this paper to describe the methods used in recovering sulfite waste liquor and the results obtained.

The arrangement of the recovery system is illustrated in the flow diagram of Figure 1. Each blowpit is connected by a common header which carries the liquor to a surge tank from which it is pumped into a storage tank. A control valve is located in the discharge line from each blowpit. An elevated tank allows gravity return of cooled sul-

fite waste liquor for padding the blowpit, prior to the blowing of the digester, to promote uniform distribution of the stock in the pit. The padding tank is filled through a bypass line from the liquor supply line to the alcohol plant equipment, the liquor being cooled by passing through a heat exchanger.

For purposes of testing the efficiencies of individual recoveries, a flowmeter was installed in the recovery line, and a sample valve installed at the points indicated in the flow diagram. Temperatures were checked with chemical thermometers, and the samples, withdrawn at regular intervals during the recovery, were tested for total solids. The correlation between specific gravity and total solids was de-

termined and is given in Figure 2. Total solids were determined by the usual method on a few samples from each run, and specific gravity determined on all samples. Flowmeter readings were checked by measuring the change in volume of the storage tank. Padding liquor volume was measured, analyzed, and the final recovery figures compensated for the amount of padding liquor used.

In the recovery procedure, the blowpit is padded with three and a half feet of sulfite waste liquor and the digester contents are blown into the padded blowpit. The stock is allowed to settle for a ten minute period during which the pulp settles to the floor of the blowpit, forming a filter mat. If insufficient time

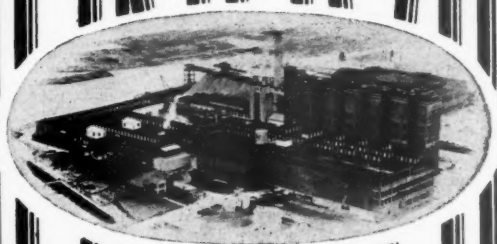
A SHIBLEY CONTEST PAPER

This is the fifth and last entry in the 1945-1946 Shibley Award contest open to young men in operations positions in the Pacific Coast pulp and paper mills.

The author, 27 years old, is an Oregon native and spent his boyhood in Hood River, Ore. He was graduated from the University of Washington. In 1937 he married Alice Powell, daughter of Mildred T. Powell, Seattle City Councilwoman, and the Abbotts have two children, three months old and two years old. They live at 25 Lake Whatcom Blvd., Bellingham, Wash. (Picture on page 17.)

The Shibley Award presentation by TAPPI National President Gunnar Nicholson, who is vice president of Union Bag & Paper Corp., was scheduled as the climactic ceremony of the Annual Joint Spring Meeting of the Pacific Coast TAPPI and Superintendents at Gearhart, Ore., May 17-18.

SOUNDVIEW

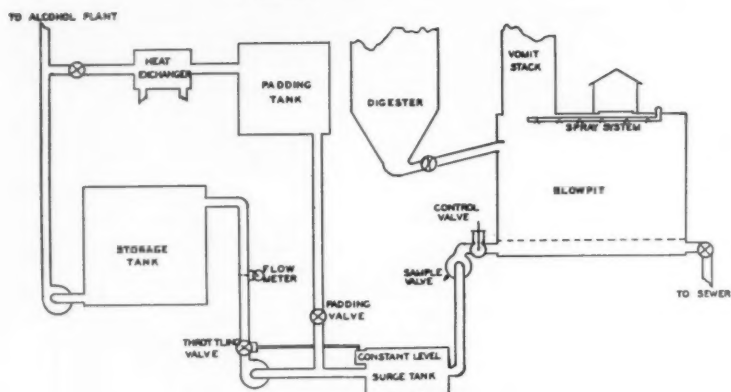


High Grade
**BLEACHED
SULPHITE PULP**

SOUNDVIEW PULP COMPANY
EVERETT • WASHINGTON



FIGURE ONE



is allowed for the stock to settle the initial fiber loss is high. After the settling period, the thermostatically controlled automatic valve is opened and the undiluted liquor is allowed to drain from the blowpit. The normal drainage period is twenty minutes. In the drainage period, the pulp settles to a more compact mass. At the completion of the drainage period, water is either dumped or sprayed over the pulp surface forming a water layer which passes through the pulp displacing the waste liquor.

From temperature tests of the water and liquor layers in the pit the indications are that the water and liquor remain in stratified layers, that settle through the pulp mat. From Figure 3, representing a typical recovery cycle, the dilution of the liquor during the displacement period is evident. This dilution is a result of the wash water breaking through the thinner sections of the pulp mat and mixing with the liquor draining from the pit. In the recovery cycle the flow rate decreases as the pulp mat compresses and offers more resistance to the liquor flow. Dilution of the liquor results in gradually diminishing temperature until the point is

reached where dilution of the liquor makes recovery uneconomical. The accumulated recovery of liquor and solids as illustrated in Figure 4 indicates the dilution which occurs during the recovery.

It has been established that the decrease in temperature due to cold water correlated well with the simultaneous decrease in total solids of the liquor and this was selected as the basis for control of the recovery endpoint. Confirmation of this method of control is indicated by the relationship illustrated in Figure 5 in which is compiled the average results of a number of runs. When the liquor temperature reaches a preselected value the automatic temperature controlled valve closes and the recovery is terminated. By variation of the cut-off temperature the amount of recovery and the degree of dilution can be controlled to meet the requirements of liquor recovery or concentration desired.

In Figure 5 the values for total solids in the liquor draining from the blowpit corresponding to the temperature of the liquor are plotted. It is apparent that the economic value of the liquor decreases as the dilution increases, and the point at

FIGURE TWO

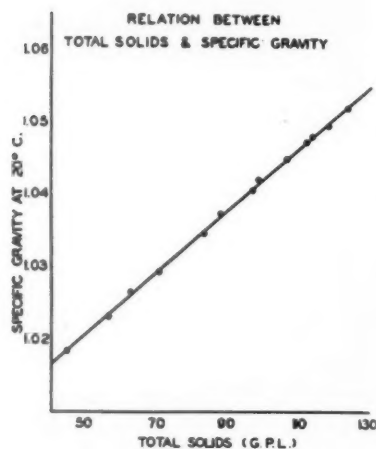
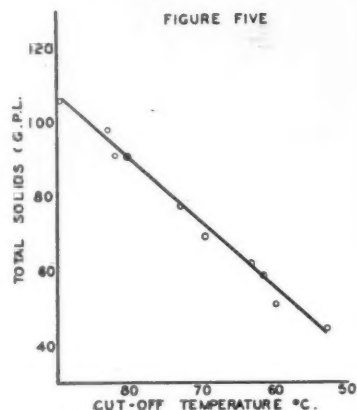
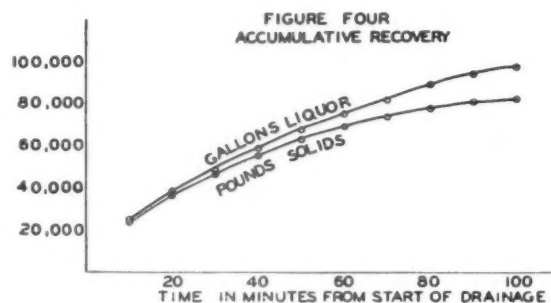
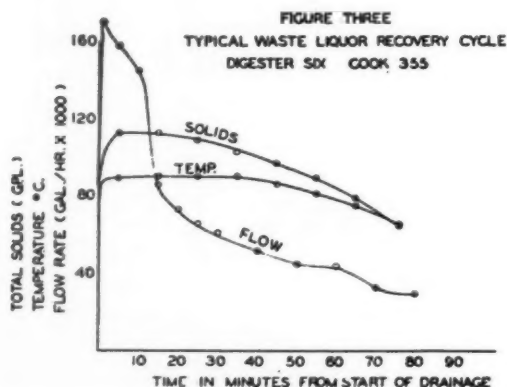


FIGURE FIVE



which to discontinue the recovery will be determined by the economics of the utilization process. Accordingly the proper cut-off temperatures for the required concentration can be selected from this figure. The values for over-all dilution and percentage recovery as given in Figure 6 show the ultimate efficiency of the recovery in relation to cutoff temperature. Of course, these values will vary depending on the recovery procedure.

In order to obtain the efficiency of





A "Must" for Low Maintenance Costs

Long radius
ell flanged fitting



Tee flanged fitting



45-degree lateral
flanged fitting

LONG LIFE and low maintenance costs — *ultimate economy* — are the natural results of installing Esco stainless steel pipe and fittings. This is due to three basic facts:

1. Esco pipe and fittings are cast from stainless steel (Esco alloy 45) the proved corrosion-resisting metal.
2. They are made by experienced technicians, have walls of generous thickness for extra strength and longer, trouble-free service.
3. They are accurately finished and rigidly inspected.

Esco flanged fittings are available in 45- and 90-degree elbows, tee, long radius ell, cross, 45-degree lateral, and reducer. Sizes range from $\frac{1}{2}$ " to 10".

Ask for New Stainless Steel Catalog

Other products of Esco "know-how" which result from years of experience in the pulp industry, are stainless steel valves, screwed and socket-weld pipe fittings, Spuncast and fabricated stainless steel pipe. These are described in the new stainless steel Catalog number 157. We have a copy for you. Ask your nearest Esco representative for it, or write us direct.

ELECTRIC STEEL FOUNDRY

2141 N. W. 25th Avenue, Portland 10, Oregon
STAINLESS STEEL FOR ULTIMATE ECONOMY

OFFICES AND WAREHOUSES

SEATTLE, 4
2724 First Ave. S.
Elliott 4161

HONOLULU, 5
814 Kapiolani Blvd.
Phone 6486

EUGENE, ORE.
1991 Sixth Ave., W. • Phone 5012

NEW YORK, 17
Graybar Building
Lexington 28958

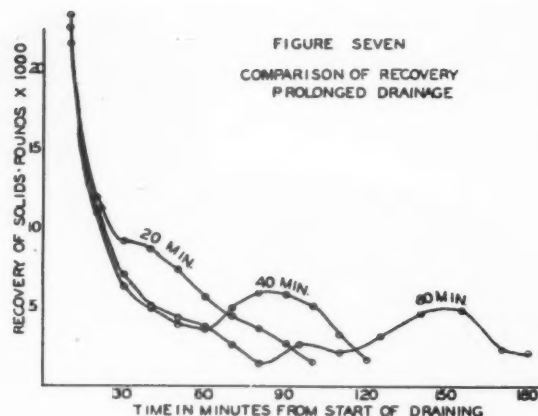
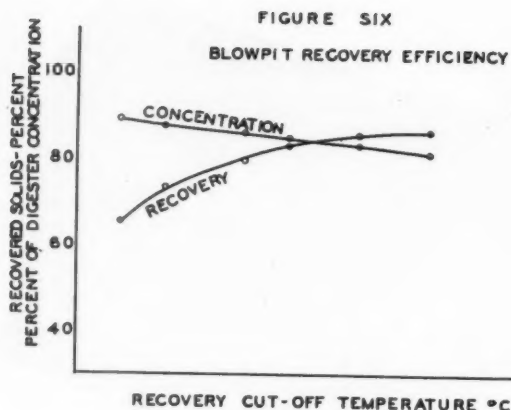
SAN FRANCISCO, 7
699 Second Street
Douglas 8346

SPOKANE, 8
121 S. Monroe St.
Main 5530

LOS ANGELES, 11
4600 Pacific Blvd.
Lucas 7251

CHICAGO, 1
221 N. La Salle St.
Dearborn 2284

IN CANADA—**ESCO LIMITED**, 1084 Homer St., Vancouver, B.C. Telephone Marine 2343



the recovery in relation to digester contents, it was necessary to estimate the total available solids in the digester and determine the concentration of these solids. The digester volume was calculated and the liquid level measured just before the blow. From this the total volume of liquor in the digester was obtained, and to this was applied a correction for the volume of the pulp, which was included in this measurement. Total solids concentration was determined on cold drawn samples from the digester and from the combined data the total dry weight of

available solids was calculated. The indicated average content of available solids in the digester was 29.6 tons.

It is known that increased free drainage time in the recovery procedure increases the percentage solids recovery. Tests have been run wherein the period of free drainage has been 20 min., 40 min., and 80 min. This increases the period in which the pulp settles to a more compact mass before flood water is added, and removes more undiluted liquor from the blowpit. The results of these tests are plotted in Figure 7. The effect of flood water displacement on liquor recovery after drainage is evident. In the eighty minute free drainage test the free flow of liquor from the pulp has decreased to a low value. In table 1 the integrated total recovery from various free drainage tests is compared. It is apparent that increased drainage will increase recovery efficiency. The recovery time is also extended, however it is possible to drain from two or more blowpits simultaneously and the recovery cycle need not be limited to the interval between blowing of digesters.

The decrease in percentage concentration and increase in percentage recovery for various cut-off temperatures indicates the value of lower recovery temperatures. However, the point of economical temperature cut-off should still be determined from Figure 5, which indicates instantaneous dilution values rather than Table 1 which indicates integrated total liquor concentrations.

Comparison of Systems

The recoveries obtained by this system are compared with other recovery data reported in the literature in Table 1. However, these cannot be compared directly without considering such factors as: pulping procedure employed, the recovery method and grade of pulp being produced.

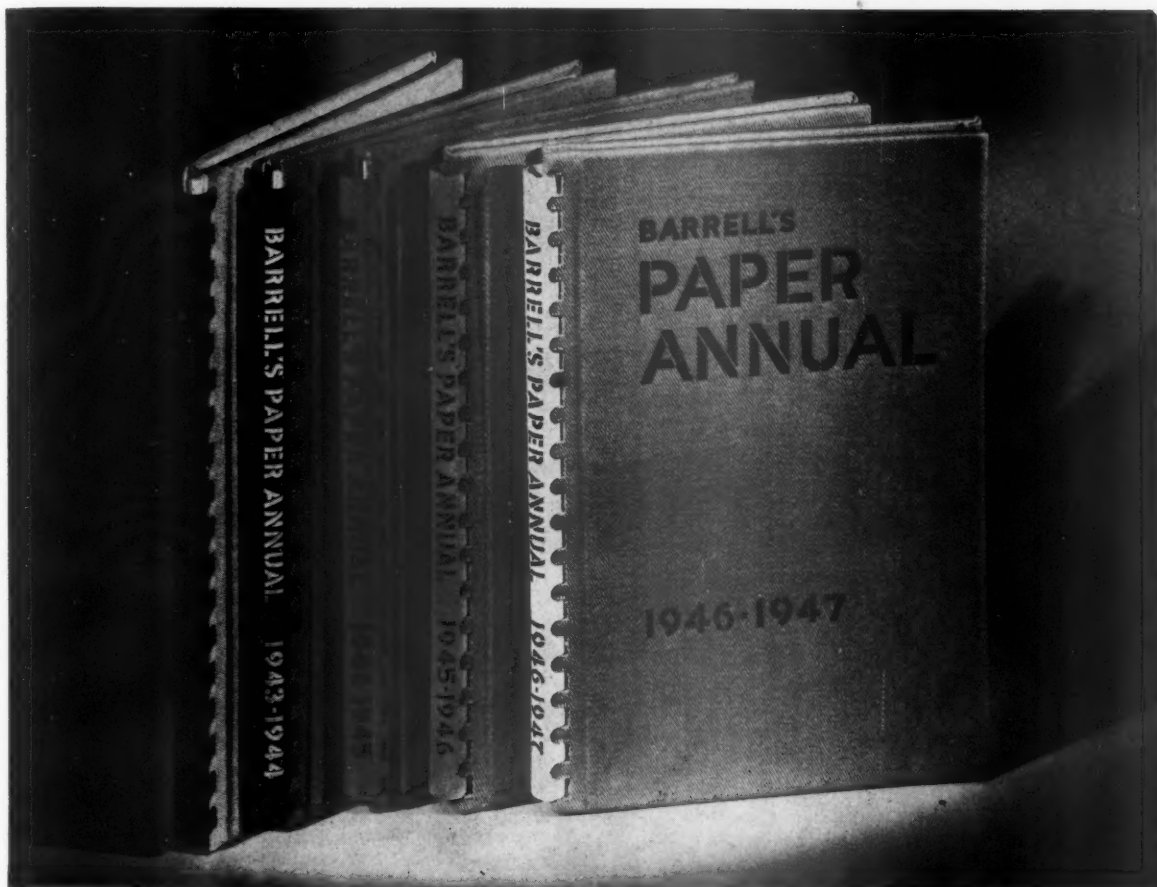
Much of the available literature on sulfite waste liquor recovery is of European origin and reports data and efficiency of European recovery practice which is somewhat different than American practice. This variation in pulping procedure leads



TABLE 1

<i>Recovery described in this paper</i>	<i>% Recovery</i>	<i>% Digester Concentration</i>
20 minute initial drainage recovery to 65°.....	77.4
20 minute initial drainage recovery to 55°.....	85.4	83.0
20 minute initial drainage recovery to 50°.....	86.8	81.8
40 minute initial drainage recovery to 50°.....	91.6	84.3
80 minute initial drainage recovery to 50°.....	93.3	85.0
<i>Swedish Recovery</i>		
Wash from above in digester (1)	90	70
Wash from below in digester (1)	87	89
Wash in Blowpit (1).....	81	83
Wash on vacuum washer (1).....	90	74
Drain and multiple washing with weak liquor and warm water in digester, Rayon pulp (2)	92.3	79.5
Series washing in 10 digesters—Easy Bleach pulp (2)	91.7	84

Literature cited: (1) Nilsson, Svenska, Pappers. 44 449-59 (1941). (2) Brauns, Tech. Notes. Svenska. Pappers. 46 244-53 (1943).



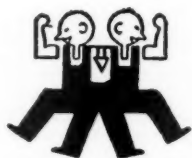
BARRELL'S PAPER ANNUAL

first published in 1942, is issued solely for the convenience of members of the pulp and paper industry, to supply an up-to-date Directory of Officials of the thirty-one Paper Industry Associations, etc.

VOLUME V. TO FEATURE DARD HUNTER PAPER MUSEUM

Forthcoming 1946-1947 edition will contain nine new photographs of the unique paper exhibit at Mass. Institute of Technology — the only comprehensive museum of paper in the world. Special articles by E. W. Tinker and R. G. Macdonald.

FREE OF CHARGE: Reservations for copies are now in order.



SIAMESE

TOUR BOSS

WILLIAM L. BARRELL CO.

Lawrence, Mass.

Please reserve me a copy of Vol. V.
BARRELL'S PAPER ANNUAL

Name.....

Company.....

Street.....

City.....

to a different approach to recovery.

Variations in individual recoveries have been observed in this mill which probably result from variation in chip moisture, wood variety, digester packing, acid composition, cooking procedures and similar conditions. It is therefore a reasonable assumption that variations in operating technique, wood varieties, and other local conditions would probably result in considerable variations between recoveries of different plants even if the comparison were based on the same method. This probably explains some of the variation noted in results from similar

methods of recovery from various sources.

In the installation of a blowpit recovery system for the alcohol plant circumstances dictated the use of existing equipment. The results of actual blowpit recovery operation and experimental data gathered during such operation have been presented and compared with recovery data from the literature. The efficiency of recovery of sulfite waste liquor from blowpits appears to compare favorably with other methods of recovery employed in sulfite waste liquor utilization industries.

HAMER LINE BLINDS

**1 MAN with 1 BAR
and 1 MINUTE**



**turns these Line Blinds from full open
to full closed...or vice versa**

Only three bar-operated nuts to turn to effect a permanent, positive shutoff in a matter of seconds! These inexpensive Hamer 3-Bolt Line Blinds are designed for safe, labor-saving, depend-

able service wherever positive shutoff is necessary, on any material which moves through a pipe line. Series 150, 300, 600 and 900 in sizes 4" to 16". Write for new engineering bulletin.



HAMER

OIL TOOL
COMPANY

1919 Verdania Ave., Long Beach 7, California

Line Blinds and Plug Valves for Every Industry

Atlantic City Packaging Conference

(continued from page 15)

glassines, paperboard laminates, and modern containers for bakery, dairy, and dried fruit products, as well as packages for all types of frozen food.

The Central Ohio Paper Co. booth displayed rolls of foil, specialty papers and kraft wrap, and the Nashua Gummed and Coated Paper Co. spotlighted specimen packages for leaders in the food field. One of the largest exhibits, in a striking red and white motif, dramatized the uses of DuPont Cellophane in modern packaging.

The Showbox Division of Central States Paper & Bag Co. offered a visual demonstration of the sales appeal to be achieved in the small decorated package. The colorful Dow Chemical exhibit put into action and picture the theme of chemistry as a foundation of all good packaging. Wraps and packages for "corner store or super markets" was the underlying idea behind the illuminated exhibit of Riegel Paper Co., while the Sylvania Industrial Corporation featured cellulose transparent casings.

The crowd-catcher at the Goodyear exhibit was the wrapping on the spot of various products in "pliofilm." Plastics for packaging were shown by Monsanto Chemical, with function, structure and visualization of product featured uppermost. Hinde Dauch stressed its reputation as "an authority on packaging" in an orange and black booth serving as background for packages now being used by industry. Gaylord Container displayed containers for metal products, food, canned fish, beverages, and specialty items such as their weather-stripping.

The multiwall bag was featured by the Union Bag & Paper Co. with photographs proving that even a husky Marine can't fight his way out of a Union multiwall bag. Container Corporation of America, with Sefton Fibre Can Co. (and Western Container which CCA has just purchased) unveiled its string-opening fiber package for cooked frozen foods; containers for chill pack; special barrier packages; and the "vapo-can" for home and storage locker frozen foods.

Shellmar dramatized its waterproof wrap by leaving immersed in a lighted goldfish tank a packaged electric fan, a telephone and Colt pistol. "Kimpak" was the starred product in the Kimberly Clark exhibit.

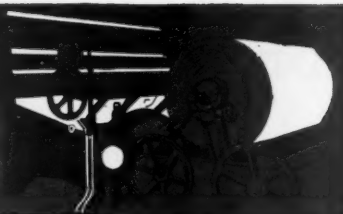
Chief drawing card of the Kalamazoo Vegetable Parchment Co.'s food and fish wraps, on exhibit in charge of Gordon Stewart, advertising manager, was KVP's "Kalacloth," a paper wash cloth which is meeting with sales success.

Puget Sound Pulp Buys Canadian Timber

Forests reserves totaling 318,000,000 feet have been purchased in British Columbia last year by the Puget Sound Pulp and Timber Co. It is hoped Canadian logs again may be shipped in quantity to the United States, but whatever may develop, the purchase was made as an investment.

At the present time, the Dominion embargo on lumber exports withholds all but a small percentage of its production for home and United Kingdom markets. The pulp company paid \$571,000 in two separate transactions for the Canadian timber.

STANDARD ENGINEERS NOTEBOOK



Hardener lengthens life of plant floors

STANDARD FLOOR HARDENER
SEALS AND MAINTAINS APPEARANCE
OF FLOORS SUBJECT TO CONTACT
WITH GREASE, OIL AND DIRT

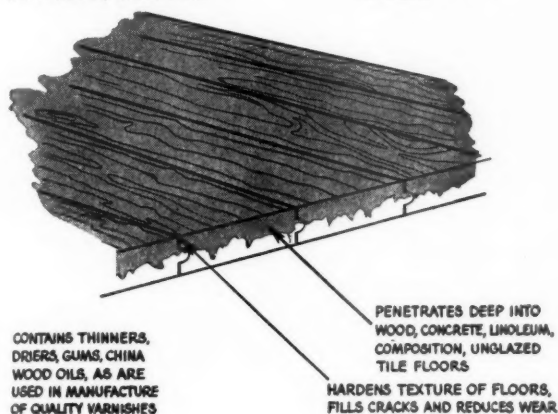
STANDARD FLOOR HARDENER
REDUCES SPLINTERING OF
WOOD AND "DUSTING" OF
CONCRETE

Where maintenance of floors is a problem because of excessive use, wear from grit, contact with grease, oil, fruit juices or discoloration, Standard Floor Hardener is recommended.

Made from special petroleum oils, wood oils, gums and thinners, most of which are used in making a quality varnish, Standard Floor Hardener penetrates deeply, hardens wood, concrete, linoleum, composition flooring and unglazed tile. It should not be used on any rubber or asphaltic product.

Standard Floor Hardener provides a hard, non-slippery surface that prevents absorption of dirt, grease, etc., and makes cleaning much easier and faster. It stops excessive splintering and chipping of wood and "dusting" of concrete.

Because a gallon of Standard Floor Hardener covers up to 600 square feet, it is economical. It may be thinned as much as 25 percent with Standard Compounded Paint Thinner.



Proper oil solves steam engine lubrication problems

Steam Engine Types and Operating Conditions	Lubricant	Steam Engine Types and Operating Conditions	Lubricant	Steam Engine Types and Operating Conditions	Lubricant	Steam Engine Types and Operating Conditions	Lubricant
Low pressure, saturated steam where rapid atomization required. Pressures up to 100 lb. gauge.	CALOL CYLINDER OIL—95X (Low vis., compounded)	Marine reciprocating engines without condensers — fresh water easily obtained. Pressures up to 160 lbs. and excessive moisture conditions.	CALOL VALVE OIL—125FX (Med. vis., heavily compounded, filtered)	Saturated or slight super-heat steam with pressures around 180 lbs.—condensate returned to boilers for ice manufacture or heating. Marine reciprocating engines with condensers.	CALOL CYLINDER OIL—160 (Med.-high vis., straight mineral)	Normal wet and moderate super-heat steam. Pressures to 225 lbs. gauge; temperatures to 550° F.	CALOL CYLINDER OIL—155PX (Med.-high vis., compounded 100% Pennsylvania)
Stationaries, donkeys, pumps, units using dry and saturated steam. Pressures to 150 lb. gauge; temperatures to 370° F.	CALOL CYLINDER OIL—130X (Med. vis., compounded)	Condensing-steam, heating and distilled-water-ice plants, etc., where rapid separation from water necessary. Pressures to 160 lb. gauge; temperatures to 375° F.	CALOL CYLINDER OIL—135FX (Med., vis., lightly compounded, filtered)	High-speed or heavily loaded engines. Pressures to 180 lbs. gauge; temperatures up to 400° F.	CALOL CYLINDER OIL—125PX (Med. vis., compounded Pennsylvania)	Pressures to 180 lbs. gauge; temperatures to 450° F. For same conditions as Calol Cylinder Oil — 135FX when non-compounded oil desired. Marine reciprocating engines with condensers.	CALOL CYLINDER OIL—150P (Med. vis., uncompounded Pennsylvania)
Stationaries, donkeys, pumps, locomotives, etc.—excessive moisture at throttle. Pressures up to 150 lbs.; temperatures up to 370° F.	CALOL VALVE OIL—130X (Med. vis., heavily compounded)	Steam cylinders. Pressures from 440 lb. gauge to 200 lb. gauge; temperatures up to 450° F.	CALOL CYLINDER OIL—155X (Med.-heavy vis., compounded)	Dry and saturated steam and slight moisture conditions. Pressures to 180 lbs. gauge; temperatures to 450° F.	CALOL CYLINDER OIL—140PX (Med. vis., compounded 100% Pennsylvania)	Corliss, poppet and piston-valve type engines and locomotives. Dry, saturated and high super-heat steam. Pressures over 160 lb. gauge; temperatures to 700° F.	CALOL CYLINDER OIL—190PX (High vis., compounded 100% Pennsylvania)

Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert service—make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20, California.

FOR EVERY JOB A **STANDARD OF CALIFORNIA** TEST-PROVED PRODUCT

KRAFT DIGESTER CIRCULATING AND INDIRECT HEATING SYSTEMS

A Discussion of Principal Troubles and Preventative Remedies Encountered in Kraft Mills in U. S. and Canada

By John M. Wilcox

Engineering Dept.,
Electric Steel Foundry Co.,
Portland, Ore.

(Paper presented at National TAPPI meeting, New York, Feb. 26, 1946).

Digester circulating systems can be divided into two main classes. The first of these is one which was used mainly in past years, and which consisted of some means of agitating the contents of the digester without external equipment. This could be done by the introduction of steam into internal pipes and is today accomplished most effectively by tumbling or rotating digesters. The second principal method, which is in wide use today for circulating and distributing the cooking reaction within a digester, is accomplished by means of a pump and external piping. Common practice is to withdraw the liquor from some point in the digester through suitable strainers and return it to a point remote from the strainers, causing a flow of liquor through the digester contents which distributes the heat.

An indirect heating system is different from a direct heating system in that the condensed steam does not dilute the contents of the digester. This is easily accomplished by use of an external circulating system and a tubular heater, which supplies all or most of the heat requirements of the cook. The principal benefit from an indirect heating system in a kraft mill employing a recovery system is the savings in evaporation of the black liquor, owing to the elimination of the condensed steam from the digester contents.

This paper will attempt to describe the principal troubles and preventive remedies encountered in kraft mills' circulating and indirect heating systems in the United States and Canada, rather than attempt a comparison of systems as built by different manufacturers.

Design Difficulties

Difficulties can be divided into these three main classifications:

1. Fundamental design. The design must be such that the system functions as intended—namely, to move mechanically the heat and material to the best advantage. Obviously, it must be designed with sufficient capacity in the various component parts to accomplish the result in the given time.

2. Maintenance of equipment. Materials of construction and working parts must be such that sufficient uninterrupted operation is obtained to secure the desired benefits. If the maintenance of equipment is an important factor in any particular system, this cost must be balanced against the advantages which have been accomplished.

3. Evaluation of benefits which might be derived from a system for any given set of cooking conditions. It is conceivable that certain types of mills would not sufficiently benefit to overcome the cost of power and maintenance required. On the other hand, in most localities—and particularly for mills desiring a higher grade of pulp—the benefits are such as to make both circulation and indirect heating highly desirable.

A circulating and indirect heating system is, in reality, a simple hydraulic and thermodynamic balance, which is complicated to a great extent by unknown conditions which exist in various pulp mills. The starting point in a design is the selection of strainer location and the point at which the circulated liquor is returned to the digester. This is a controversial subject, and no great amount of exact experimental data is available to prove or disprove various methods employed. Strainers in the past, and even at present, are located at various points in the digester from the bottom to the top, including intermediate points. Location of strainers bears a definite relation to the amount of liquor that can be circulated and the total volume of liquor used in the digester. These factors should be taken into consideration in the preliminary design, so that proper hydraulic function will result. In addition to the strainer location, there are other factors that should be taken into account in this connection. The strainers should have sufficient area for liquor removal. The size of the holes in the strainer and the strainer area

are important factors in being able to maintain a sufficient rate of circulation throughout the cook. Many systems in the past have been improperly designed, with a resulting decrease in circulation toward the latter part of the cook, which seriously affects the results obtained. In some mills the strainers both corrode and erode rapidly, causing high maintenance and poor operation. There are also many mills experiencing trouble from rapid lime scale formation on the strainer area. These last two difficulties can both be eliminated or retarded for practical operation by the use of alloy steels, such as 18-8 stainless.

The outlet nozzles through the digester shell are subject to severe abrasion and sometimes corrosion, since the velocity at this point is usually high. This has been corrected in many instances by the installation of a light gauge stainless steel lining, which is relatively inexpensive and easy to install.

Pipe and valves in the external piping are both subject to lime scale formation and corrosion. These are usually not too severe, and the high relative cost of alloy steels does not make their use practical. Scale formation can sometimes be retarded by maintaining comparatively high velocities in the piping.

The circulating system pump plays an extremely important part in the system as a whole. Regardless of design, all circulating systems evidence a tendency for the circulating rate to drop toward the latter part of the cook because of the softening of the chips in the digester. This phenomenon increases the friction head on the pump suction and promotes a poor pumping condition. Because of this, the circulating pump should be slow speed and have a large impeller eye diameter. Pumps of this type usually have better operating characteristics for this service. It is also important that the pump have a suitable characteristic curve, since pressure conditions within the system are constantly changing and the pump must be able to adjust itself to these conditions with-

out too great a decrease in capacity. The efficiency of the pump is important where power costs are high. The liquor in some mills is more corrosive to mild steel than in others, and in many cases it is most economical to use alloy steel construction in the pump to decrease maintenance costs. The pump packing is often a source of serious trouble because of the high temperatures and pressures encountered. Deep stuffing boxes are usually required, with water lubrication; and there is always the danger of worn packing allowing excessive water to mix with the liquor and thereby cause unnecessary dilution. The pump capacity should be sufficient to circulate the liquor through the digester a sufficient number of times during the cooking cycle to provide good heat distribution. It must also pump a sufficient volume of liquor through the heater to maintain a reasonably low temperature rise through the heater. If the liquor temperature rises too rapidly in passing through the heater, the liquor might flash upon leaving the tubes, which would wear them out rapidly.

Selection of Heater

The selection of a heater for an indirect cooking system involves several factors which are all important. In the first place, the heater must have sufficient heating area which, at a given steam pressure, will transfer sufficient heat to bring the digester up to temperature in the required time. The heater should be constructed of materials which will not wear out rapidly under conditions prevailing in the mill. Mild steel tubes have shown an excellent life in some localities, but it has been found very advantageous to use alloy steel tubes in others.

The majority of the tubular heaters in use today are either single-pass or 2-pass. There are definite reasons for the preference for either one of these. The single-pass heater has the advantage that the friction loss and, hence, the power requirements are less. Frequently, a single-pass heater will more easily fit into the piping arrangement. A single-pass heater has the disadvantage that the tubes are usually comparatively long and, hence, difficult to clean if scale formation occurs. Where alloy steel tubes are used, the length of the tubes makes it difficult to compensate for expansion strains due to temperature differences between the tubes and other parts of the heater. The 2-pass heater has the advantages of shorter tubes, and a simpler means of compensating for expansion strains. In the selection of either type heater, it is extremely im-



JOHN M. WILCOX, of Portland, Ore., who discussed difficulties with kraft circulating and indirect heating systems at New York. His talk was based on his company's experience, broadened by representation in East and South U. S. and Canada by Swenson Evaporator Co. Mr. Wilcox has traveled extensively in the past year to many Southern, Eastern and Western mills.

portant to maintain suitable liquor velocities through the heater tubes, since lime scaling tendencies are present in all mills.

Returning the circulated liquor to the digester is sometimes a problem. If the liquor is put into the top of the digester, it is sometimes felt necessary to employ some means of distribution over the top area of the digester. Spray rings and distribution cones for this purpose have been a source of trouble, due to corrosion and the difficulty of holding them in place. They have the added disadvantages of sometimes interfering with chip filling. In some cases the liquor is put into the bottom of the digester through a tee. Here, the high velocity and resulting turbulence often cause severe erosion or corrosion.

Operating Difficulties

In general, assuming the fundamental design is correct from the mechanical and thermodynamic standpoint, operating difficulties can be divided into the following classifications:

1. Corrosion (which can be corrected by the use of suitable materials of construction);
2. Lime scale formation, which is aggravated by the following conditions:
 - a. Poor white liquor clarification.
 - b. Low liquor velocity
 - c. Extremely high liquor temperature rise in passing through heater

- d. Extreme high temperature difference between steam and liquor passing through heater.
- e. Superheat in steam
- f. Mill supply water being extremely hard

3. The third trouble encountered is lack of sufficient benefit to the particular operation.

With indirect heating there is always a savings in evaporation which, in itself, will usually justify the equipment. The application of circulation itself without indirect heating is dependent upon the size of the digester, the grade of pulp desired, and the cooking cycle used. If the system is carefully designed, it will allow considerable latitude in grade of pulp produced and cooking cycle used, so that the mill is not limited in operation. A careful analysis of these in comparison with successful systems in operation today will give some indication of what results might be expected. These are classified as increased production, increased quality, increased yield, or decreased chemical usage. These benefits have to be balanced against the disadvantages of the equipment such as amount of maintenance which might be expected and the power requirements.

From a study of the industry throughout the country today, it seems that future trends are toward more wide use of both circulation and indirect cooking. Circulation is more important in the mills seeking higher quality grades, and indirect cooking is important to all mills as a step toward more economical operation. Satisfactory indirect cooking has not been accomplished without external circulation, which makes these two go hand in hand. Trends are also toward the use of more alloy steel construction for more permanent and maintenance-free installations. The operators today welcome the use of alloys steels, where beneficial, and realize that their slightly higher cost pays large dividends in future operations.

Swedes Fail to Get Coal From Britain

Sweden failed in recent negotiations to obtain coal shipments from England, which might have decreased the demand for wood as fuel, thus easing this urgent competition with pulp mills for wood supply. The United States has been shipping coal to Sweden.

A recent issue of the Swedish Timber Journal states that "the price policy of the Swedish authorities in respect to home-consumed wood has not been changed since the autumn of 1942, when present maximum prices were fixed, despite the fact that world market prices have since then risen very considerably."

Pulp and Paper

**LYDDON
& COMPANY
(AMERICA) INC.**

EXPORTERS OF
WOOD PULP TO
BRITAIN, SOUTH AMERICA
AND ALL OTHER
WORLD MARKETS

**PARSONS
AND
WHITTEMORE**

INCORPORATED

WOOD PULP
WORLD-WIDE
PAPER EXPORTERS

10 EAST 40TH STREET.
NEW YORK 16, N. Y.

Two Modern Laboratories Promote Swedish Forest Use Developments

A new research laboratory for the Swedish Cellulose Co., equipped for research in a variety of fields of wood technology and utilization, as well as the fine new laboratory financed by the pulp and paper industry in general, are two new institutions in Sweden for advancement of forest products industries.

The two big laboratories were described as having the latest and best equipment by two recent visitors to North America—Erland Waldenstrom, chief of research and development, Swedish Cellulose Co., Stockholm, and Arne Sundelin, director of the research division for wood technology for the same company at Sundsvall, Sweden.

Mills and laboratories in Northeastern United States, in Wisconsin and in Washington and California states were visited by the two Swedish travelers.

They reported a tremendous growth of pressed wallboard manufacture in Sweden. Production in Sweden of this type of board now is around 200,000 tons annually, about the same as in U. S., but as most of it is consumed in Sweden, there is about 20 times the per capita use there as compared with the U. S.

Fifteen plants are now making hard wallboard, all being built since Masonite patents were introduced in 1928. All use Asp-lund and Fourdrinier machines, but compete in varied after-treatment methods.

Shipping of Montana Pulpwood To Wisconsin Mills Is Upheld

Montana's state attorney-general, Victor Bottomly, has taken exception to policies recently adopted by the Montana State Land Commission which permit the state forester to dispose of pulp timber to operators in Wisconsin.

A member of the public agency, he contends, that if the forestry office is given this power, the prospects for introducing a pulp industry in the state will be stymied.

However, the commission gave State Forester Rutledge Parker this authority when it voted three to one in favor of his six-point program for controlling the cutting and disposing of Montana timber.

Forester Parker's program calls for full utilization of mature and over-aged timber and careful preservation of young trees to insure a second crop at the earliest possible date. Prohibition against the sale of commercial saw-log timber to pulpwood operations was also included.

Citing the proposed establishment of a Kraft pulp mill at Polson, Mont., the attorney declared that when this plant is placed in operation, work for 500 persons will be provided during the first year and from then on more and more employees will be added in accordance with expansion plans.

Shaver Appointed by Continental Can

R. W. Shaver has been appointed general manager of the paper mill division of Continental Can Co., according to Hans A. Eggers, executive vice president. This division, which is part of the over-all paper division comprises two paper manufacturing mills located at Filer City, Mich., and Lyons Falls, N. Y.

Mr. Shaver was formerly vice president and general manager of the Gould Paper Co., Lyons Falls, recently acquired by Continental Can, and will continue to make his headquarters at that plant.

Chicago Pro Paper Group

The short supply situation facing users of starches in paper industry was discussed by a panel group at the April 15 meeting of the Chicago Professional Paper Group at the Chicago Bar Association rooms in that city.

On March 18, D. C. Donaldson of Eastman Kodak Co., showed a sound film on modern photo-engraving methods.

Four Howard Paper Mills In Ohio Merged

Four paper companies in Miami Valley, Ohio, have merged into one corporation, known as Howard Paper Mills, Inc.

They were the Aetna Paper Co. and Dayton Envelope Co., both of Dayton; the Howard Paper Co., of Urbana, and the Maxwell Paper Co., of Franklin.

Program for Supts. Of Del.-N. J.-Penn.

The Delaware-New Jersey-Pennsylvania group of the American Superintendents will hold their annual convention on May 10-11 at the Ritz Carlton Hotel, Atlantic City, according to word received from Alice R. Dow, secretary-treasurer, who will be in charge of registration beginning at 1:00 p. m. on the first day.

John Dieffenderfer, Hercules Powder Co., is chairman of the golf tournament the same day. That evening there will be a get-together in the Merry-Go-Round bar.

The program on the 11th includes a paper on stock preparation to be presented by a representative of the Dilts Machine Works; a motion picture called "Careers for Cellulose" by Hercules Powder; *Stock Formation on Cylinder Machines* by Phil Goldsmith of Pusey & Jones Corp.; and "Portrait of an Industry," a motion picture produced by Heller & Merz. The annual banquet will convene at 6:30 p. m. and will be followed by a dance.

St. Joe Paper Co. Buys Properties

The St. Joe Paper Co., Port St. Joe, Fla., and the News-Journal Co., of Pensacola, Fla., bought 300 feet frontage on the main thoroughfare in Fort Walton, noted West Florida resort, for commercial development. A building to house a newly-founded newspaper and a structure for a bank will be erected.

The St. Joe Paper Company, a corporation owned by the Alfred I. du Pont Estate, for many years has owned large tracts in Okaloosa County and has been interested in development in the area.

Newsprint Use Exceeds Output

Newsprint is being consumed faster than it is being produced, the American Newspaper Publishers Association cautioned in a recent special bulletin.

The ANPA warned that stocks in the hands of newspapers have dropped to the lowest in many years, "in the face of uncertain transportation factors due to tight freight car needs for food."

One big Canadian mill has advised customers it will reduce shipments 5% in the second quarter.

Lacasella Gets 30-Year Pin in Los Angeles

Sixty employees of Crown Zellerbach Corp., Crown Willamette Division in Los Angeles, gathered at the Mayfair Hotel Rainbow Room in that city March 9 for their service pin dinner.

Louis Bloch, chairman of the board, flew from San Francisco to Los Angeles to be principal speaker.

A diamond-studded pin for 30 years' service was received by Vincent Lacasella, tissue printing foreman.

Lester E. Remmers, manager of the division, introduced the speakers. William D. Welsh paid tribute to three boys killed in action in Europe.

Returns to Mill

Sergeant Al Schachtsneider, of the maintenance department of the Puget Sound Pulp and Timber Co., has returned from three years with the Army in India and Burma.

TO SERVE YOU..



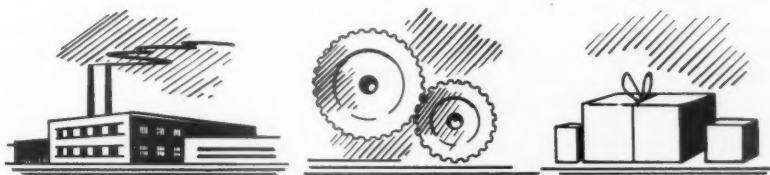
More Top-Notch Engineers

As part of its program to be of greater service to the paper industry, Cheney Bigelow has added top-flight personnel to its engineering staff during the past several years—men with a thorough understanding of the industry and its problems. Consequently, we have been able to make great progress in our design and experimental work, progress which has enabled us to reach the point where we will soon be able to announce new products of great interest to you.

Another phase of our program has been the improvement of our facilities both by the addition of factory space and the acquisition of the finest precision machinery. We are now in an excellent position to give you even faster, more expert service than ever before in the repair of old or the construction of new equipment.

The sole objective of our new program is to be more useful to you. We hope you will call on us.

MORE FACTORY SPACE • MORE PRECISION MACHINERY • NEW PRODUCTS



CHENEY BIGELOW

Fourdrinier Wires • Dandys • Cylinders • Wire Cloth

CHENEY BIGELOW WIRE WORKS • 417 LIBERTY STREET • SPRINGFIELD, MASS.

PULP & PAPER INDUSTRY

Importance of Forest Management

(continued from page 29)

of the American Forestry Association as a part of his re-appraisal of the Forest Resources of the Douglas Fir Region. In a nut shell, Kirkland's findings are that on the basis of pre-war management and utilization practices, this region can produce a sustained yield cut of only 6 billion board feet per annum, which is inadequate to sustain our industries and to supply predicted post-war requirements. But on the basis of improved forest management and close utilization, the attainable cut as estimated by Kirkland could rise to 13 billion feet per year and be maintained at or above that level forever.

A production gain of this magnitude would obviously be of great importance to this region as a whole and surely of particular importance to the Puget Sound, Grays Harbor, and Columbia River districts where depletion of old growth timber is now reaching a serious point. None of the forest industries in these depleted districts has a greater stake in these potentialities than the pulp and paper industry with its enormous plant investments which can only be maintained and kept productive through a continued flow of raw materials.

Kirkland estimates that this 7 billion foot production gain probably cannot be attained in less than 10 years, because of the adjustments required on operating plans and logging methods. If the economics that would make this production gain feasible are not sustained, then, of course, the indicated 7 billion foot gain might never be attained in full.

Where then does Kirkland find this 7 billion foot gain? Approximately one-third of it would come from re-logging of cut-over lands (or from closer utilization); another third from thinnings in second growth stands; and the final third from salvage cuttings in old growth stands. The last mentioned source, as noted by Kirkland, can be tapped only through advance construction of a large mileage of logging roads and would be of particularly great importance in our national forest, where much of the remaining old growth is found.

However, these possibilities in forest management and utilization improvements are not the only problems that each concern should look into for itself. From the elementary problems of a short term timber supply to the complexities of an economically feasible sustained yield

set-up come many questions for which each individual concern should find the answers by itself. Here are some:

1. What is our present timber supply situation on the basis of our present timberland ownership and plant requirements?

2. Do we have the makings of a sustained yield operation in our present timberland ownership and plant set-up?

3. If we do have some sort of possibilities toward sustained yield, how can we attain them in full and in the most economic manner?

4. To what extent can co-operative tie-ups of publicly owned timber, or direct acquisition of private timber or forest lands be employed to formulate a sustained yield unit of proper structure and age class distribution?

5. Will the acquisition of second growth and restocking lands permit a step up of our allowable cut and thereby enable quicker liquidation of our old growth investments? In other words, can proper acquisition bring about an increased cut and at the same time, a reduction of the overall capital investment?

Importance of Second Growth To Pacific Coast Pulp Industry

By

Axel J. F. Brandstrom

(This is the second of two papers given by him at Bellingham TAPPI meeting April 2).

Second-growth production in large volume is apparently here to stay.

In this shift toward second-growth the pulp industry has probably fewer problems to face than the lumber and plywood industries. Both the lumber and plywood industries have been built up on a plentiful supply of old-growth timber of exceptional size and quality. In converting to second-growth it is a certainty that many of the quality items now produced by these industries will drop out of the picture—a situation which may or may not be remedied in all respects through development of laminated products, face-lifting procedures, chemical strength and beauty treatments, or other modern tricks of this rapidly developing wood products game. The pulp industry, too, was built up on a plentiful supply of old-growth but the reason for this was not superior quality but cheaper logs—a situation which held as long as a plentiful supply of old-growth pulp logs was being pushed on the market as a by-product of large-scale saw timber operations. In converting to second-growth, then, this industry need not worry about quality; therefore, conversion is likely to come as a matter of course as soon as they find that second-growth can be brought in and converted into chips at a lower cost than old-growth. The evolution of the pulp industry and its raw material situation are now pretty definitely heading in this direction. Some pulp mills have already started to draw on small second-growth in large volume. Others will follow. In the case of sulphite mills which must have hemlock, this shift toward second-growth, of course, will

be held back by the fact that there is not enough second-growth hemlock available to sustain all the mills. In their case, therefore, partial dependence on the remaining supply of old-growth hemlock is likely to continue for a long time to come. But the overall industry-wide picture, as I see it, is that a substantial start toward second-growth has already been made and this development is likely to go on apace from here on.

This shift toward second-growth cuttings has already attracted a good deal of attention and drawn a lot of comments, some of them of the unfavorable kind. There are those who view these cuttings with alarm. They reason that it is all wrong to be cutting fast-growing young trees while we still have vast areas of over-mature old-growth which is badly in need of cutting. They want these cuttings stopped. They want second-growth regulation. And on the basis of the second-growth cuttings we now see along our highways, they have pretty good reasons for their complaints. What we see, in most cases, is clear cutting or other forms of heavy cuttings which leave nothing but a mess. If that is the type of cutting that we propose to practice, then certainly we should have regulation or whatever it takes to save these young stands from clear cutting during their most productive stage.

Actually, of course, what these young stands need is not prohibitions against cutting but early and repeated management cuttings. The quicker we can get into these stands with the axe and the more often we can give them a going over with the axe, the more abundant and better will be the harvest.

There is a lot of wood volume at stake in this time-tested management prescription. We already have

in this region some 6,000,00 acres of second-growth stands in need of this kind of cuttings, and with each passing year more and more acreage is moving up to this class. In these stands current mortality losses through suppression probably amounts to well over 4,000,000 cords per year—a figure which I quote from Burt P. Kirkland's recent study of this subject—and nearly all of this loss could be turned into good pulp wood and other products if we could only step in and give these stands the management cuttings they need. And stoppage of mortality losses, of course, is not the only gain that comes with proper management. We also gain volume production through reduction of time required for stand renewal and establishment—a gain which might amount to another 4,000,000 cords. And aside from these huge volume gains—and my total here shows 8,000,000 cords (equivalent to 4,000,000 board feet)—this management procedure would also bring a very significant gain in quality production.

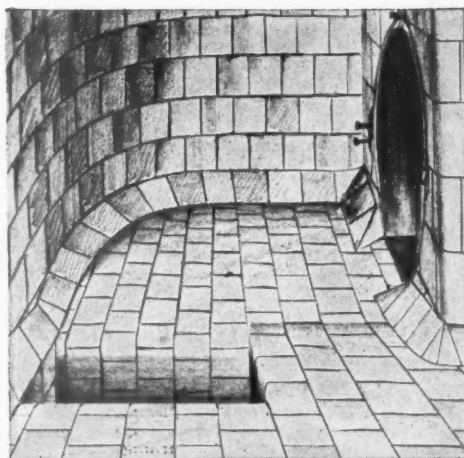
This potential gain of possibly 4,000,000 board feet per year from the 6,000,000-acre second-growth area we are here talking about would really be something for the forest industries of this region to grab for. Give a third of it to the pulp industry and you have virtually enough to sustain in full the installed pulp mill capacity of this region. And give the other two-thirds to the lumber and plywood industries and you will have given them a pretty substantial lift, too. These two industries, in fact, would get a double lift from this intriguing transaction. The first lift they get is that by having the pulp mills shift over to a second-growth diet the lumber and plywood industries would naturally get that much more of the remaining old-growth timber for themselves. And the second lift they would get, would be the above-mentioned material from the second-growth forests—a material which through this prolonged selective management procedure may indeed become a valuable quality material of perhaps critical importance to these particular industries by the time our old-growth timber resources are gone. Thus, it is apparent that early and proper management of these 6,000,000 acres of second-growth stands is of paramount importance to the forest industries of this region.

What then must the forest duties of this region do in order to attain these potentialities?

NEW PROCESSES require correctly engineered linings

Stebbins installs the correct linings because for 62 years they have devoted themselves to the development of linings for the pulp and paper industry. One contract, one responsibility covers the complete installation, involving: (1) an analysis of your problem, (2) a serviceable and durable design, (3) a construction for economy and efficiency.

Consult Stebbins when lining problems arise.



Stebbins Engineering Corporation

TEXTILE TOWER

SEATTLE 1, WASHINGTON

1. They must come to the realization that proper management of at least the privately-owned second-growth stands is their responsibility—as well as their opportunity—and that this responsibility is an immediate one and not one to put off until the old-growth timber is gone.

2. They must lose no time in getting properly conducted second-growth operations underway and in that process they must devise and develop the logging machinery and methods that are required for proper management of these stands.

3. They must provide opportunity for application of real "dirt forestry" to these young stands—a step which, I believe, involves a complete break away from the organizational set-up we now have in our old-growth operations.

As to the first of these three propositions, it might be argued that one of the difficulties here is that so much of the privately-owned acreage is owned by small owners who have no connection with the forest industries, who have no forestry organization, and who have no sense of responsibility or knowledge as to how their timber should be cut. However, if the responsible concerns will take on responsibility first of all for the lands which they own,

and secondly for lands which they do not own but from which they obtain stumpage and logs through direct purchase, then we can probably extend this responsibility a long way. This, as you know, is already being done in the South where the more forward-looking pulp mills are seeing to it that proper cutting is being done on all lands from which they obtain pulpwood. They do this not so much by preaching good forestry but by actually writing good forestry practice right into their purchase contracts and they look after enforcement of these practices by providing competent foresters to do the actual marking. Experience to date, as I am told, shows that this is being done successfully in the South, and I believe it can be done equally well here.

New Methods and Equipment Needed

I feel it is very important that the industry goes for quick action in development of the right type of machinery and methods. We have seen enough of our second-growth cuttings to know that we are not using the right tools and methods and the longer we permit wrong practices to become entrenched the more difficult will the changeover be.

Joe Blake Heads Esco Seattle Office

Joseph Blake is the manager of the Seattle office of Electric Steel Foundry Co., of Portland, Ore. Mr. Blake was appointed to the position earlier this year, succeeding J. H. Scheeland, who returned to Portland to take charge of the order department.

Mr. Blake was born in Lewiston, Idaho, and graduated from the University of Washington in 1935 where he majored in property management. He has been with Esco three years.

Container Corp. of America Acquires Coast Plants


Container Corp. of America has announced it has arranged through an exchange of stock to acquire control of the California Container Corp., with box factories in Los Angeles, San Francisco and Seattle.

N. C. Flint, president of the California Container Corp., will continue in his present position.

New Men on Staff Of Paper Institute

The Institute of Paper Chemistry, Appleton, Wis., through Westbrook Steele, its executive director, announces the appointment to its staff of F. A. Burningham, formerly with Brown Co., Berlin, N. H.

Other recent additions to the institute's staff include: Thomas B. Wadsworth, C. B. Sitterson Jr., Charles J. Lingelbach Jr., R. Douglas Rawcliffe and Robert D. Rae.



LOW, LOW, LOWER

**PUGET SOUND
POWER & LIGHT CO.**

FRANK McLAUGHLIN, President

Puget Power's
average rate
per kilowatt-
hour for resi-
dential and
rural customers has
dropped 40% under
its average for 1935-
1939, while 1945
prices of "all items"
in the family budget
have increased 32%
during the period.

PUGET SOUND
ELECTRIC RATES
DOWN 40%

**PUGET SOUND
POWER & LIGHT CO.**

FRANK McLAUGHLIN, President

Heads Wood Procurement For Union Bag

G. C. Shoptaw became manager of wood procurement of Union Bag & Paper Corp., Savannah, Ga., on February 1, according to announcement by J. J. Armstrong, woodlands division manager.

Mr. Shoptaw was formerly associated with the Southern Kraft Division, International Paper Co., at Georgetown, S. C. A. I. Jeffords, Jr., recently discharged from the army and formerly on the corporation's accounting staff, was named assistant to the manager of wood procurement.

Keyes Plans New Plant

The Keyes Fibre Co., Waterville, Me., manufacturer of molded pulp products, has announced that it will build a plant in Hammond, Ind.

Anninos Rejoins Pacific Coast Supply Co.

Capt. M. P. Anninos, USAF, who served in Europe during the war for four years, is back on the sales staff of the Pacific Coast Supply Co., assisting H. J. Bolger, resident manager, in covering California.

Mr. Anninos had been with Pacific Coast Supply five years before joining the Army.

Rayonier Man Elected a State Senator

A. G. McArthur, Woodlands Manager for Rayonier Incorporated, at Fernandina, Fla., has been elected a state senator without opposition. He will represent Nassau County in the legislature.

LITERATURE AVAILABLE TO YOU

BLACK-CLAWSON CO., Hamilton, Ohio—The publication "Messenger" for Feb. gives data and illustrations on uses and operation of Dilts Hydrapulper, Hydrafiner and Jordan engine.

BIRD MACHINE CO., South Walpole, Mass.—"The Stuff Box" for Feb. details various applications of Bird Consistency Regulator to pulp and paper stock control problems.

CHAS. LATHROP PACK FOUNDATION, 1214 16th St. NW, Washington 6, D. C., offers at cost of \$5.00 book entitled "Longleaf Pine" by W. G. Wahlenberg, which

has been highly praised by responsible authorities as comprehensive digest and survey.

PAISLEY PRODUCTS, INC., 1770 Canalport Ave., Chicago 16, offers on request a laboratory report showing properties and uses of a new synthetic thermoplastic resin emulsion adhesive for foil lamination.

GENERAL MILLS, INC., Research Dept., 2010 East Hennepin, Minneapolis 13, has issued brochure entitled "Story of Guar" and telling use of guar flour in paper industry.

Classified Advertising

DO YOU WANT A SALES REPRESENTATIVE?

EXPERIENCED; WELL KNOWN IN WESTERN MILLS; ALREADY REGULARLY VISITING ALL PULP-PAPER MILLS ON PACIFIC COAST.

Reply Box 27, Pulp & Paper Industry, 71 Columbia Street, Seattle 4, Wash.

WANTED—Experienced Merchandising Men. Established wholesale paper distributing company located in California has an opening for men experienced in merchandising fine and coarse papers. Excellent starting salary and opportunity for advancement. State qualifications and age. All applications confidential. Reply Box 28, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

FOR SALE—100 New 10x11x3/4 Chipper Knives suitable for Mitts and Merrell, Diamond or Harvey Hogs. Reply, "O. T. P," 6 Bluerock Road, Wilmington, Del.

The following issues of Pacific Pulp & Paper Industry are needed to complete our files: June 1933 and June 1937. Anyone wishing to sell these numbers, please communicate with Box No. 26, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

WANTED — Experienced Fine and Coarse Paper Salesmen wanted by California wholesale paper house. Both city and country territories available. Liberal drawing account and commission basis of compensation. State experience and age. Application strictly confidential. Reply Box 29, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

WANTED IMMEDIATELY—Experienced kraft pulp mill tour foreman, chemist or chemical engineer and junior chemist for new modern bleached kraft pulp mill. In reply give experience, personal history and salary expected. Box 30, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

CONFIDENTAL EMPLOYMENT SERVICE FOR PAPER AND PULP MILLS

WE INVITE CORRESPONDENCE WITH EMPLOYERS SEEKING EXECUTIVES AND EXECUTIVES SEEKING NEW POSITIONS.

CHARLES P. RAYMOND SERVICE, INC.

PAPER MILL DEPARTMENT
294 WASHINGTON STREET
BOSTON, MASS.